DENALI

3308 Bernice Avenue
Russellville, Arkansas 72802
479-498-0500

June 6, 2023

Ms. Anastasia Sharp
Biosolids Coordinator
e-copy: Anastasia.sharp@tn.gov
Tennessee Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass – Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

Re: Request for Exemption
Copperhill Class A Pilot

Dear Ms. Sharp:

Attached you will find a site package detailing Denali's Request for Exemption from TDEC, Division of Water Resources' General State Operation Permit for the Land Application of Non-Exceptional Quality Biosolids. Based on analytical data and operational procedures, the material being beneficially reused at the Copperhill Superfund Alternative Site meets Class A/EQ standards. Information contained within the site package includes:

- Appendix A – Project Description
- Appendix B – Aerial and Topographic Maps of Copperhill Site
- Appendix C – TCLP plus PCBs for Incoming Residuals
- Appendix D – Proposed Trucking Routes
- Appendix E – Cementech Information
- Appendix F – Part 503 Class A/EQ Lab Analysis
- Appendix G – Temperature and pH Logs

If you have any questions or require any additional information, please contact me at 256-503-4300.

Sincerely,

Jeff Retzke

Jeff Retzke
Senior Director of Environmental Services, Southeast Region

Appendix A

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Copperhill Reclamation Pilot Project

The Copperhill site, encompassing approximately 1,800 acres, is located at 304 Ocoee Street, Copperhill, TN 37317 and is part of the former, and much larger, Copper Basin Mining District. It is located approximately 0.5 miles north of the GA/TN stateline, immediately north of McCaysville, GA and is owned by Mr. Buddy Haynes (dba Intertrade Holdings, Inc).

The Copper Basin Mining District site includes parts of the North Potato Creek and Davis Mill Creek watersheds and a 26-mile-long reach of the Ocoee River affected by mining activities. Getting its name from the copper deposits discovered circa 1843, Copperhill experienced a "copper rush" where more than 30 mining operations would eventually locate. The mining companies used smelting to separate the copper from the rocks and cut timber to fuel the smelters. The resulting sulfuric acid (acid rain) and deforestation devastated the environment. The copper basin became a barren man-made dessert of red clay that covered thousands of acres. By 1899, the Tennessee Copper Company was formed and purchased the mining rights to the area. They continued work in the area for nearly a century, with the final mine shutting down in 1987.

Although Mr. Haynes (dba Intertrade Holdings) owns the Davis Mill Creek section of the overall Copper Hill site, Occidental Petroleum, as the Potentially Responsible Party (PRP), leases and operates a water treatment facility in the southwestern portion of the site which treats ALL the surface water onsite prior to discharging to the Ocoee River via a Record of Decision (ROD) administered by EPA/DOJ. This creates a situation where there are technically no Waters of the State on the site. See aerial and topographc images of the overall site in Appendix B.

The project includes using mobile equipment to process non-hazardous municipal wastewater residuals with quicklime (i.e. calcium oxide) to produce Class A/EQ lime-stabilized biosolids that meet the land application standards for pollutants, pathogen reduction, and vector attraction reduction detailed in 40 CFR 503 Subpart D and Chapter 0400-40-15 of the Tennessee Water Quality Control Act. The source of the municipal wastewater residuals will be the South Cobb, Noonday, and Northwest Water Reclamation Facilities in Cobb County, Georgia. All three facililites are owned and operated by the Cobb County Water System and are further described below. Laboratory analysis (i.e., TCLP) confirming the non-hazardous nature of the municipal wastewater residuals is included in Appendix C.

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The South Cobb Water Reclamation Facility (WRF), NPDES # GA0026158, is a 40 million gallon per day (mgd) wastewater treatment plant located at 490 Lee Industrial Blvd in Austell, Cobb County, Georgia. Situated on 18 acres adjacent to the Chattahoochee River, the South Cobb WRC utilizes screening, primary clarifiers, aeration basins, secondary clarifiers, thickening, and centrifuge dewatering to treat their solids. See an image of the South Cobb WRF immediately below:

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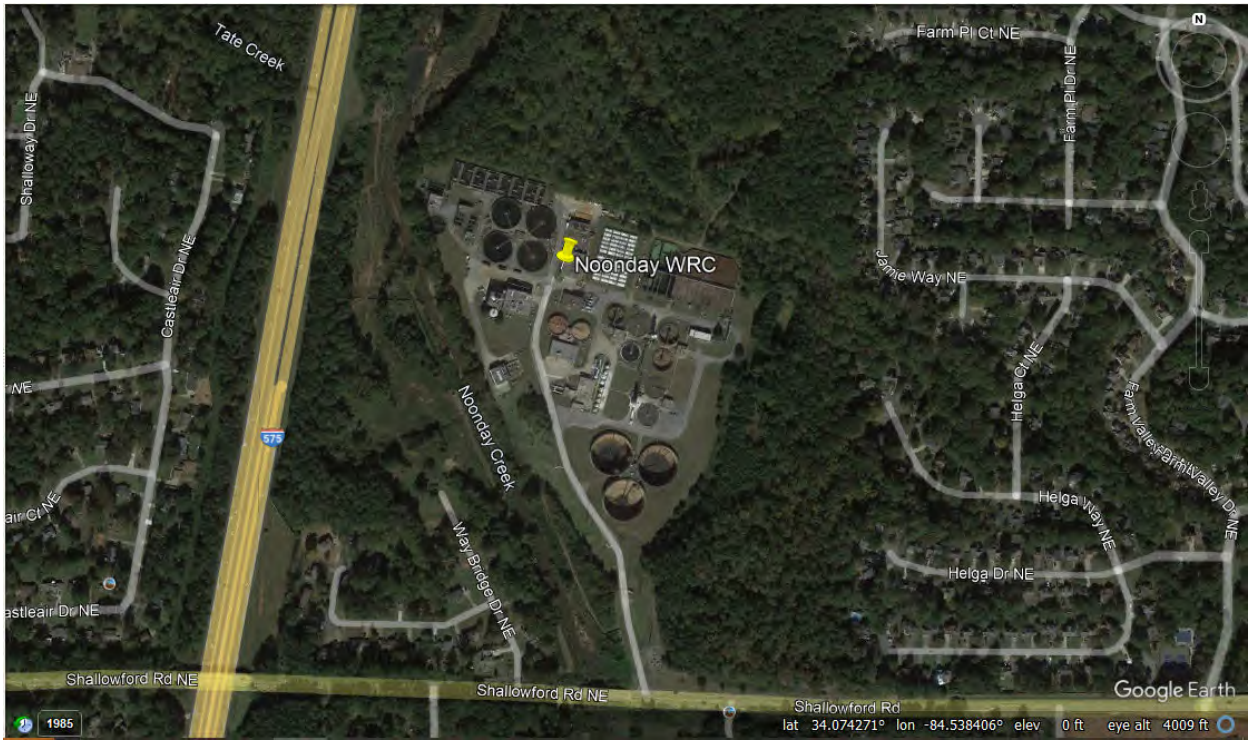
The Noonday WRF, NPDES # GA0024988, is a 20 million gallon per day (mgd) wastewater treatment plant located at 415 Shallowford Road in Kennesaw, Cobb County, GA. Situated on 20 acres along Shallowford Road and alongside Noonday Creek, the plant provides advanced liquid treatment and includes a pump station, primary and secondary clarifiers, aeration basins, and chlorine disinfection. Solids are treated with aerobic digesters and thickener tanks and dewatered with centrifuges. For more than 45 years, the Noonday Creek WRF has been treating wastewater for the citizens in the northeast corner of Cobb County and portions of Cherokee County. See an image of the Noonday WRF immediately below:



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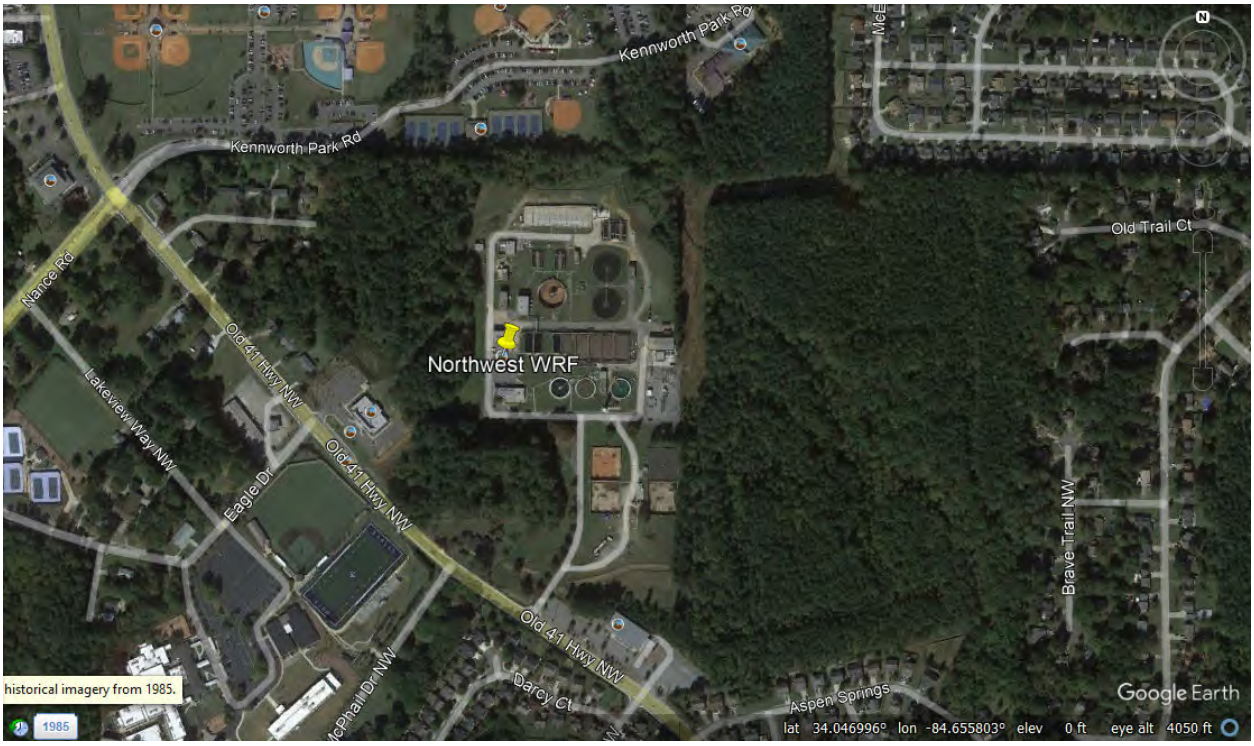
The Northwest WRF, NPDES # GA0046761, is a 12 million gallon per day (mgd) wastewater treatment plant located at 3740 Highway 293 in Kennesaw, Cobb County, GA. Situated in the northwest corner of Cobb County near Proctor Creek, the facility provides advanced liquid treatment and includes a pump station, primary and secondary clarifiers, aeration basins, and chlorine disinfection. Solids are treated with aerobic digesters and thickener tanks and dewatered with belt filter presses. See an image of the Northwest WRF below:



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Dewatered municipal residuals are scaled (weighed) and delivered, via sealed trailer trucks with turnbuckled tailgates and impermeable tarps, to a roofed pole barn metal building at the interior of the Copperhill site. At no point are un-lime stabilized materials be stored outside of the building. See Appendix B for the building's location and see Appendix D for the proposed trucking route. Please note that extra steps have been taken to prevent trucks from traveling through downtown Copperhill.

The Plan of Operation includes processing a batch of dewatered municipal residuals the same day it is delivered to the site, or within 24 hours of delivery. As mentioned previously, the wastewater residuals are delivered to the processing facility by truck and unloaded at the designated location within the bermed processing area inside the pole barn, at which point it is loaded into the biosolids processing equipment. For this project, Denali is utilizing CemenTech Environmental (CTE) mixing equipment. Information related to the CTE equipment is presented in Appendix E.

Calcium oxide (quicklime) is delivered to the site by truck in appropriate amounts to efficiently process the incoming wastewater residuals. The lime material is pneumatically delivered to silos associated with the portable processor.

Once in the processing equipment, the dewatered wastewater residuals are mechanically mixed with quicklime to promote an exothermic reaction which increases the temperature of the mixture to equal to or greater than 70°C (158 °F) and achieves a pH of greater than or equal to 12 standard units. Based on operational experience, approximately 15%-18% quicklime is added to the dewatered wastewater residuals.

Class A/EQ pathogen reduction is met by adhering to the requirements cited in Alternative 5: Use of PFRP [503.32(a)(7)]; Pasteurization. Pasteurization is achieved when the 'temperature of the sewage sludge is maintained at 70°C (158°F) or higher for 30 minutes or longer." Furthermore, the density of fecal coliforms in the sewage sludge is tested, at the frequency cited in Table 1 of 40CFR503.16, to ensure that fecal coliform density is below 1,000 most probable number (MPN) per gram of total solids (dry weight basis).

Requirements for vector attraction reduction (VAR) are met using Option 6 as specified in 40CFR503.33(b)(6). Addition of sufficient alkali to raise the pH to at least 12 at 25°C (77°F) and maintain a pH ≥12 for 2 hours and a pH ≥11.5 for 22 more hours.

After mixing in the CTE unit, biosolid samples are collected for the initial temperature reading and pH testing. Afterwards, the material is hauled to a staging area further into the mine site and unloaded in a segregated area until the 30 minute temperature requirement of 70°C (158°F) and final pH of ≥11.5 (24 hours post treatment) has been confirmed. The location of the staging area is dependent upon the remediation needs of Intertrade Holdings. At no time are un-lime

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stabilized residuals in contact with Class A/EQ material. After confirming the final temperature requirement, and the final pH requirement, the material is considered Class A/EQ. If either reading does not achieve the required levels, the material can be transported back to the lime stabilization equipment and re-processed.

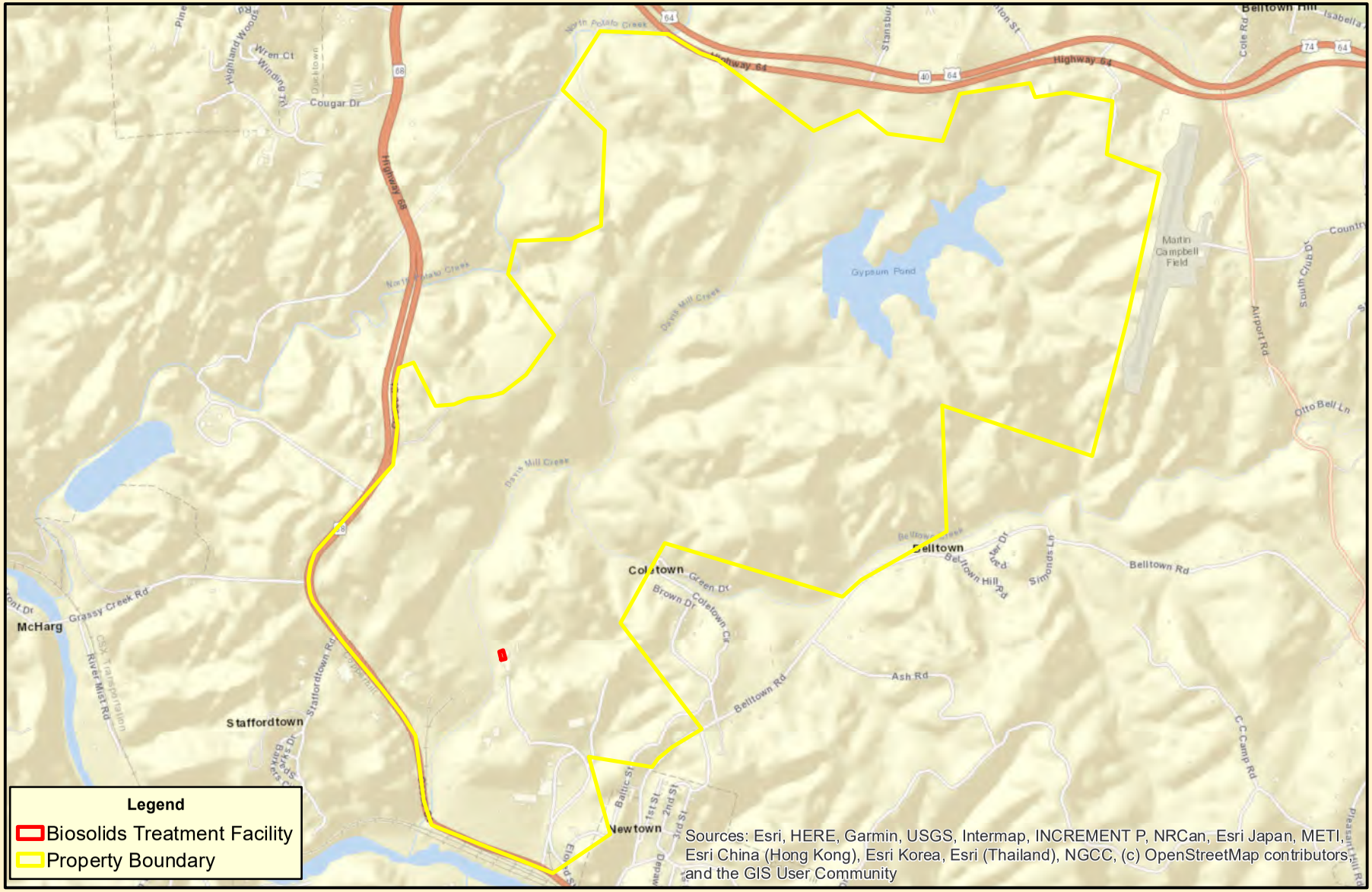
Lab analyses verifying the Class A/EQ quality of the material is included in Appendix F. The treated biosolids were tested for the 503 regulated metals (As, Cd, Cu, Pb, Hg, Mo, Ni, Se, Zn), the nitrogen series, total phosphorus, total potassium, % solids, pH and fecal coliform density. Moving forward, frequency of testing will based on the amount of biosolids (metric tons per 365-day period) applied to the land as given in 503.16 Table 12. Additionally, a copy of a daily pH/temperature log is included in Appendix G. The pH/temperature log is completed every day material is processed. This log is used to verify that pH and temperature requirements associated with Class A/EQ pathogen and vector attraction reduction methods documented in Alternative 5: Use of PFRP [503.32(a)(7)]; Pasteurization and Option 6 as specified in 40CFR503.33(b)(6),respectively, are satisfied.

Due to the temperature of the material and the potential need for de-gassing, Denali and Intertrade Holdings have requested the ability to allow the Class A/EQ material to remain in the staging area for slightly longer periods of time prior to land application. This extended time allows for the material to cool down, de-gas, and further dry (cure). The more the material can cure in the interior of the mine property, the less probability of generating odors that lead to off-site complaints.

Although the operational plan, as described earlier, is to process the municipality's batch of dewatered wastewater residuals the same day it arrives, an extended hold time (not to exceed 5 days) may be required if the municipality's quantity of dewatered residual does not allow for efficient daily processing. Processing may take place seven days per week. Denali will require operational flexibility to ensure regulatory and client obligations are met whenever conditions and circumstances dictate. It may also be necessary to complete quality control procedures throughout the weekend to meet the requirements for Class A/EQ level material.

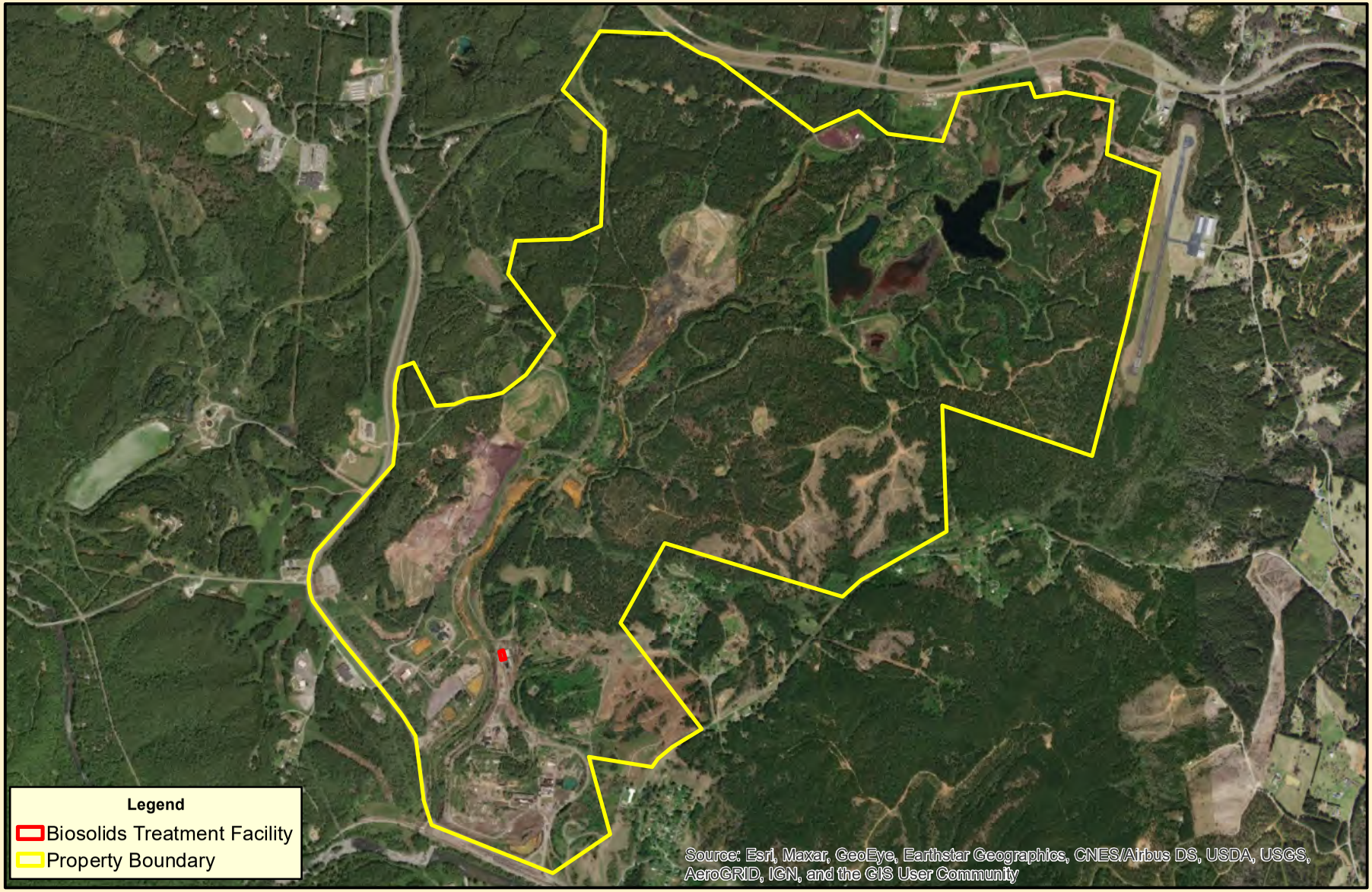
Excluding any interference, the maximum holding time of any unprocessed dewatered residual within the processing area is not expected to exceed 5 days. If necessary, after 5 days, the unprocessed residual will be removed from the processing area and hauled to an approved facility (i.e. permitted landfill). If an equipment breakdown continues for more than 5 days, all deliveries will be diverted to an alternately approved facility. The delivery and storage of the dewatered residual shall be handled in a manner, which will not create a nuisance or be harmful to the public health, safety, or the environment. In no case will unprocessed residual be stored for more than 5 days in the processing area unless approved by TDEC in writing.

Appendix B



Biosolids Treatment Building

Polk County, Tennessee



N
W E
S

Biosolids Treatment Building

0 0.125 0.25 0.5 0.75 1
Miles

Polk County, Tennessee

N
W E
S

Biosolids Treatment Building

0 130 260 520 780 1,040
Feet

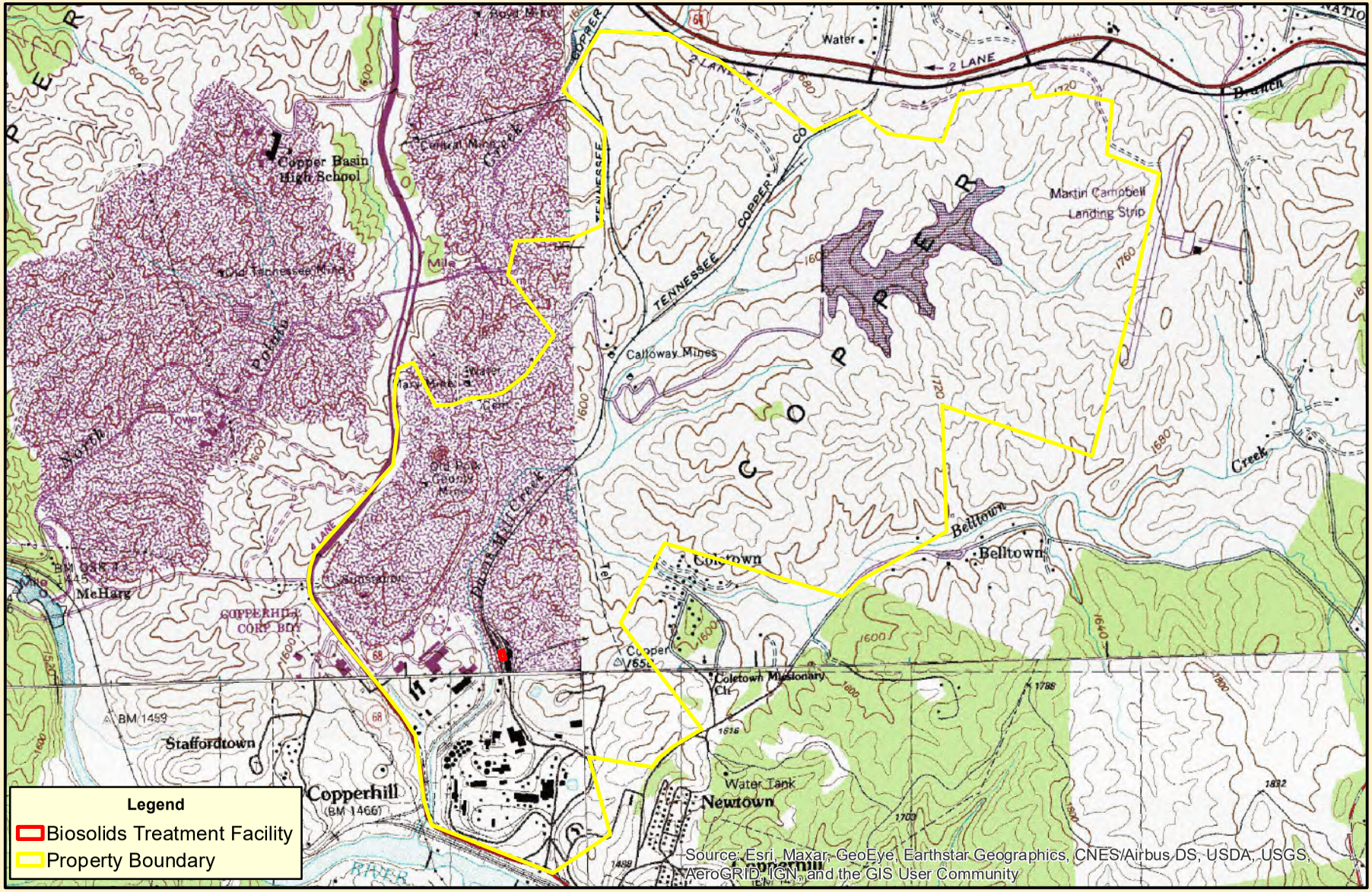
Polk County, Tennessee

N
W E
S

Biosolids Treatment Building

0 30 60 120 180 240
Feet

Polk County, Tennessee



Legend

- Biosolids Treatment Facility
- Property Boundary

N
W E
S

Biosolids Treatment Building

0 0.125 0.25 0.5 0.75 1 Miles

Polk County, Tennessee

Appendix C

Attachment D
Biosolids Analysis

Biosolids Handling and Disposal Services
for R. L. Sutton and South Cobb Water Reclamation Facilities
Program No. C0166

South Cobb WRF

Cobb County Water System
Industrial Pretreatment Sampling Report and Chain of Custody

210270

Office of Environmental Compliance
Industrial Pretreatment
680 S. Cobb Dr.
Marietta, GA 30060
(770) 528-8216
(770) 528-8217

Cobb County...Expect the Best!

Site name: South Cobb WRF Cake
Site address: 420 Lee Industrial Dr
City: Austell | Georgia | Zip: 30168

Total flow: mgd | from: am/pm | to: am/pm
Present flow: feet | gpm | Adjusted: feet
Date:
Water meter readings:
Flow meter (type): | pH:
Primary flow device: | Temp. (°C):
Sampled by: Travis Newmiller
Sampling location:

Comments:

❖No samples split with facility. Signature:_____

Date	Time	Sample ID	Sample ID	Grab/Composite	BOD_5 / TSS	NH_3-N	Total Phosphorus	Metals	VOC	O&G	TPH	Cyanide	SVOC	TCLP-Full				
2/10/21	9:45	RL021021-8		G										X				

All samples must be analyzed by approved analytical methods as specified in 40 CFR 136.

Date	Time	Relinquished By:	Received By:	Sample ID
2/10/21	11:05	Travis Newmiller	2/10/21 1105AM	SC021021-8

Page 2 of 7

Analytical Environmental Services, Inc **Date:** 19-Feb-21

Client:	Cobb County Water System	**Client Sample ID:**	SC021021-8
Project Name:	South Cobb WRF Cake	**Collection Date:**	2/10/2021 9:45:00 AM
Lab ID:	2102A70-001	**Matrix:**	Solid

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
VOLATILES, TCLP SW1311/8260D				(SW5030B)				
1,1-Dichloroethene	BRL	0.10		mg/L	310399	20	02/12/2021 16:03	CM
1,2-Dichloroethane	BRL	0.10		mg/L	310399	20	02/12/2021 16:03	CM
2-Butanone	2.0	0.20		mg/L	310399	20	02/12/2021 16:03	CM
Benzene	BRL	0.10		mg/L	310399	20	02/12/2021 16:03	CM
Carbon tetrachloride	BRL	0.10		mg/L	310399	20	02/12/2021 16:03	CM
Chlorobenzene	BRL	0.10		mg/L	310399	20	02/12/2021 16:03	CM
Chloroform	BRL	0.10		mg/L	310399	20	02/12/2021 16:03	CM
Tetrachloroethene	BRL	0.10		mg/L	310399	20	02/12/2021 16:03	CM
Trichloroethene	BRL	0.10		mg/L	310399	20	02/12/2021 16:03	CM
Vinyl chloride	BRL	0.040		mg/L	310399	20	02/12/2021 16:03	CM
Surr: 4-Bromofluorobenzene	104	74.6-120		%REC	310399	20	02/12/2021 16:03	CM
Surr: Dibromofluoromethane	107	78.2-120		%REC	310399	20	02/12/2021 16:03	CM
Surr: Toluene-d8	102	83.1-120		%REC	310399	20	02/12/2021 16:03	CM
SEMIVOLATILES ORGANICS, TCLP SW1311/8270E				(SW3510C)				
1,4-Dichlorobenzene	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
2,4,5-Trichlorophenol	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
2,4,6-Trichlorophenol	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
2,4-Dinitrotoluene	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
Hexachlorobenzene	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
Hexachlorobutadiene	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
Hexachloroethane	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
m,p-Cresol	1.1	0.10		mg/L	310226	1	02/12/2021 15:21	YH
Nitrobenzene	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
o-Cresol	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
Pentachlorophenol	BRL	0.50		mg/L	310226	1	02/12/2021 15:21	YH
Pyridine	BRL	0.10		mg/L	310226	1	02/12/2021 15:21	YH
Cresols, Total	1.1	0.10		mg/L	310226	1	02/12/2021 15:21	YH
Surr: 2,4,6-Tribromophenol	72.1	57.8-139		%REC	310226	1	02/12/2021 15:21	YH
Surr: 2-Fluorobiphenyl	83.7	48.5-119		%REC	310226	1	02/12/2021 15:21	YH
Surr: 2-Fluorophenol	63.9	42.9-120		%REC	310226	1	02/12/2021 15:21	YH
Surr: 4-Terphenyl-d14	80.9	53.9-130		%REC	310226	1	02/12/2021 15:21	YH
Surr: Nitrobenzene-d5	93	51-125		%REC	310226	1	02/12/2021 15:21	YH
Surr: Phenol-d5	65.6	43.3-120		%REC	310226	1	02/12/2021 15:21	YH
PESTICIDES, TCLP SW1311/8081B				(SW3510C)				
Chlordane	BRL	0.0050		mg/L	310265	1	02/15/2021 12:41	CA
Endrin	BRL	0.0010		mg/L	310265	1	02/15/2021 12:41	CA
gamma-BHC	BRL	0.00050		mg/L	310265	1	02/15/2021 12:41	CA
Heptachlor	BRL	0.00050		mg/L	310265	1	02/15/2021 12:41	CA
Heptachlor epoxide	BRL	0.00050		mg/L	310265	1	02/15/2021 12:41	CA
Methoxychlor	BRL	0.0050		mg/L	310265	1	02/15/2021 12:41	CA
Toxaphene	BRL	0.050		mg/L	310265	1	02/15/2021 12:41	CA
Surr: Decachlorobiphenyl	73.5	47.4-120		%REC	310265	1	02/15/2021 12:41	CA
Surr: Tetrachloro-m-xylene	69.5	40.2-120		%REC	310265	1	02/15/2021 12:41	CA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- F Analyzed in the lab which is a deviation from the method
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 19-Feb-21

Client:	Cobb County Water System	**Client Sample ID:**	SC021021-8
Project Name:	South Cobb WRF Cake	**Collection Date:**	2/10/2021 9:45:00 AM
Lab ID:	2102A70-001	**Matrix:**	Solid

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MERCURY, TCLP SW1311/7470A					(SW7470A)			
Mercury	BRL	0.00400		mg/L	310376	1	02/15/2021 19:17	SK
ICP METALS, TCLP SW1311/6010D					(SW3010A)			
Arsenic	BRL	0.250		mg/L	310298	1	02/17/2021 12:37	KB
Barium	BRL	0.500		mg/L	310298	1	02/17/2021 12:37	KB
Cadmium	BRL	0.0250		mg/L	310298	1	02/17/2021 12:37	KB
Chromium	BRL	0.0500		mg/L	310298	1	02/17/2021 12:37	KB
Lead	BRL	0.100		mg/L	310298	1	02/17/2021 12:37	KB
Selenium	BRL	0.100		mg/L	310298	1	02/17/2021 12:37	KB
Silver	BRL	0.0250		mg/L	310298	1	02/17/2021 12:37	KB
HERBICIDES, TCLP SW1311/8151A					(SW3510C)			
2,4,5-TP (Silvex)	BRL	0.20		mg/L	310252	1	02/16/2021 17:08	UH
2,4-D	BRL	0.20		mg/L	310252	1	02/16/2021 17:08	UH
Surr: DCAA	72.9	50.1-120		%REC	310252	1	02/16/2021 17:08	UH

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 28, 2022

Travis Neumuller
Cobb County Water System

680 South Cobb Drive
Marietta GA 30060

RE: Northwest WRF Cake

Dear Travis Neumuller: Order No: 2202L22

Analytical Environmental Services, Inc. received 1 samples on 2/17/2022 11:00:00 AM for the analyses presented in following report.

"No problems were encountered during the analyses except as noted in the Case Narrative or by qualifiers in the report or QC Summary. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/21-06/30/22.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective through 06/30/22 and Total Coliforms/ E. coli, effective 04/20/20-04/24/23.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/23.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Mirzeta Kararic

Mirzeta Kararic

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

Cobb County Water System

2202L22

Industrial Pretreatment Sampling Report and Chain of Custody

Cobb County...Expect the Best!

Office of Environmental Compliance
Industrial Pretreatment
680 S. Cobb Dr.
Marietta, GA 30060
(770) 528-8216
(770) 528-8217

Site name: Northwest WRF Cake			
Site address: 3340 Hwy 293 NW			
City: Kennesaw	Georgia	Zip: 30144	
Total flow: mgd	from: am/pm	to: am/pm	
Present flow: feet	gpm	Adjusted: feet	
Flow meter (type):		pH:	
Primary flow device:		Temp. (°C):	
Sampling location:			
Date:			
Water meter readings:			
Sampled by: Travis Newmiller / Casey Seerup			

Comments:

❖No samples split with facility. Signature:_____

Date	Time	Sample ID	Sample ID	Grab/Composite	BOD_5 / TSS	NH_3-N	Total Phosphorus	Metals	VOC	O&G	TPH	Cyanide	SVOC	TCLP-Full				
2/17/22	9:20	NW021722-8		G										X				

All samples must be analyzed by approved analytical methods as specified in 40 CFR 136.

Date	Time	Relinquished By:	Received By:	Sample ID
2/17/22	10:55	[signature]	[signature] 2/17/22 1120	NW021722-8

Client:	Cobb County Water System	**Client Sample ID:**	NW021722-8
Project Name:	Northwest WRF Cake	**Collection Date:**	2/17/2022 9:20:00 AM
Lab ID:	2202L22-001	**Matrix:**	Solid

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
VOLATILES, TCLP SW1311/8260D				**(SW5030B)**				
1,1-Dichloroethene	BRL	0.10		mg/L	331450	20	02/23/2022 16:03	AV
1,2-Dichloroethane	BRL	0.10		mg/L	331450	20	02/23/2022 16:03	AV
2-Butanone	BRL	0.20		mg/L	331450	20	02/23/2022 16:03	AV
Benzene	BRL	0.10		mg/L	331450	20	02/23/2022 16:03	AV
Carbon tetrachloride	BRL	0.10		mg/L	331450	20	02/23/2022 16:03	AV
Chlorobenzene	BRL	0.10		mg/L	331450	20	02/23/2022 16:03	AV
Chloroform	BRL	0.10		mg/L	331450	20	02/23/2022 16:03	AV
Tetrachloroethene	BRL	0.10		mg/L	331450	20	02/23/2022 16:03	AV
Trichloroethene	BRL	0.10		mg/L	331450	20	02/23/2022 16:03	AV
Vinyl chloride	BRL	0.040		mg/L	331450	20	02/23/2022 16:03	AV
Surr: 4-Bromofluorobenzene	105	74.6-120		%REC	331450	20	02/23/2022 16:03	AV
Surr: Dibromofluoromethane	114	78.2-120		%REC	331450	20	02/23/2022 16:03	AV
Surr: Toluene-d8	91.3	83.1-120		%REC	331450	20	02/23/2022 16:03	AV
SEMIVOLATILES ORGANICS, TCLP SW1311/8270E				**(SW3510C)**				
1,4-Dichlorobenzene	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
2,4,5-Trichlorophenol	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
2,4,6-Trichlorophenol	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
2,4-Dinitrotoluene	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
Hexachlorobenzene	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
Hexachlorobutadiene	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
Hexachloroethane	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
m,p-Cresol	1.6	0.10		mg/L	331147	1	02/22/2022 21:44	YH
Nitrobenzene	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
o-Cresol	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
Pentachlorophenol	BRL	0.50		mg/L	331147	1	02/22/2022 21:44	YH
Pyridine	BRL	0.10		mg/L	331147	1	02/22/2022 21:44	YH
Cresols, Total	1.6	0.10		mg/L	331147	1	02/22/2022 21:44	YH
Surr: 2,4,6-Tribromophenol	83.7	57.8-139		%REC	331147	1	02/22/2022 21:44	YH
Surr: 2-Fluorobiphenyl	82.3	48.5-119		%REC	331147	1	02/22/2022 21:44	YH
Surr: 2-Fluorophenol	79.3	42.9-120		%REC	331147	1	02/22/2022 21:44	YH
Surr: 4-Terphenyl-d14	85.8	53.9-130		%REC	331147	1	02/22/2022 21:44	YH
Surr: Nitrobenzene-d5	87.3	51-125		%REC	331147	1	02/22/2022 21:44	YH
Surr: Phenol-d5	75.4	43.3-120		%REC	331147	1	02/22/2022 21:44	YH
PESTICIDES, TCLP SW1311/8081B				**(SW3510C)**				
Chlordane	BRL	0.0050		mg/L	331211	1	02/22/2022 19:49	ST
Endrin	BRL	0.0010		mg/L	331211	1	02/22/2022 19:49	ST
gamma-BHC	BRL	0.00050		mg/L	331211	1	02/22/2022 19:49	ST
Heptachlor	BRL	0.00050		mg/L	331211	1	02/22/2022 19:49	ST
Heptachlor epoxide	BRL	0.00050		mg/L	331211	1	02/22/2022 19:49	ST
Methoxychlor	BRL	0.0050		mg/L	331211	1	02/23/2022 18:40	ST
Toxaphene	BRL	0.050		mg/L	331211	1	02/23/2022 18:40	ST
Surr: Decachlorobiphenyl	84.1	47.4-120		%REC	331211	1	02/22/2022 19:49	ST
Surr: Tetrachloro-m-xylene	84.2	40.2-120		%REC	331211	1	02/22/2022 19:49	ST

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	F	Analyzed in the lab which is a deviation from the method
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Client:	Cobb County Water System	**Client Sample ID:**	NW021722-8
Project Name:	Northwest WRF Cake	**Collection Date:**	2/17/2022 9:20:00 AM
Lab ID:	2202L22-001	**Matrix:**	Solid

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MERCURY, TCLP SW1311/7470A				**(SW7470A)**				
Mercury	BRL	0.00400		mg/L	331271	1	02/23/2022 13:39	SK
ICP METALS, TCLP SW1311/6010D				**(SW3010A)**				
Arsenic	BRL	0.250		mg/L	331293	1	02/22/2022 13:39	JM
Barium	BRL	0.500		mg/L	331293	1	02/22/2022 13:39	JM
Cadmium	BRL	0.0250		mg/L	331293	1	02/22/2022 13:39	JM
Chromium	BRL	0.0500		mg/L	331293	1	02/22/2022 13:39	JM
Lead	BRL	0.0500		mg/L	331293	1	02/22/2022 13:39	JM
Selenium	BRL	0.100		mg/L	331293	1	02/22/2022 13:39	JM
Silver	BRL	0.0250		mg/L	331293	1	02/22/2022 13:39	JM
HERBICIDES, TCLP SW1311/8151A				**(SW3510C)**				
2,4,5-TP (Silvex)	BRL	0.20		mg/L	331498	1	02/24/2022 21:41	UH
2,4-D	BRL	0.20		mg/L	331498	1	02/24/2022 21:41	UH
Surr: DCAA	97.3	50.1-120		%REC	331498	1	02/24/2022 21:41	UH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	F	Analyzed in the lab which is a deviation from the method
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Cobb County Water System** AES Work Order Number: **2202L22**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	●	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	●	○		
5.	Custody seals intact on shipping container?	○	○	●		
6.	Temperature blanks present?	○	●	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	●	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	●	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	●	○	○		
10.	Sampler name and/or signature on COC?	●	○	○		
11.	Were all samples received within holding time?	●	○	○		
12.	TAT marked on the COC?	○	●	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ■	

13. Cooler 1 Temperature 0.2 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). AS 2/17/22

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	●	○	○		
17.	Custody seals present on sample containers?	○	●	○		
18.	Custody seals intact on sample containers?	○	○	●		
19.	Do sample container labels match the COC?	●	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	●	○	○		
21.	Were all of the samples listed on the COC received?	●	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	●	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	●	○	○		
24.	Were samples received in appropriate containers?	●	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	●		
26.	Were trip blanks submitted?	○	○	●	listed on COC ☐ not listed on COC ☐	

27. Comments: _____

This section only applies to samples where pH can be checked at Sample Receipt.

I certify that I have completed sections 16-27 (dated initials). CD 02/17/22

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	○	○	●		
29.	Containers meet preservation guidelines?	○	○	●		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH. This also excludes metals by EPA 200.7, 200.8 and 245.1 which will be verified between 16 and 24 hours after preservation.

I certify that I have completed sections 28-30 (dated initials). CD 02/17/22

Locked

End of Report

AES
ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 10, 2022

Travis Neumuller
Cobb County Water System

680 South Cobb Drive
Marietta GA 30060

RE: Noonday WRF Cake

Dear Travis Neumuller: Order No: 2202258

Analytical Environmental Services, Inc. received 1 samples on 2/2/2022 12:00:00 PM for the analyses presented in following report.

"No problems were encountered during the analyses except as noted in the Case Narrative or by qualifiers in the report or QC Summary. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/21-06/30/22.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective through 06/30/22 and Total Coliforms/ E. coli, effective 04/20/20-04/24/23.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/23.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Mirzeta Kararic

Mirzeta Kararic

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

Cobb County Water System

Industrial Pretreatment Sampling Report and Chain of Custody

2202258

Cobb County...Expect the Best!

Office of Environmental Compliance
Industrial Pretreatment
680 S. Cobb Dr.
Marietta, GA 30060
(770) 528-8216
(770) 528-8217

Site name: Noonday WRF Effluent			
Site address: 415 Shallowford Rd.			
City: Kennesaw	Georgia	Zip: 30144	
Total flow: mgd	from: 9:00 am/pm	to: 8:45 am/pm	
Present flow: feet	gpm	Adjusted: feet	
Flow meter (type):		pH:	
Primary flow device:		Temp. (°C):	
Sampling location:			

Date:
Water meter readings:
Sampled by: Travis Newmeyer

Comments:

❖No samples split with facility. Signature:_____

Date	Time	Sample ID	Sample ID	Grab/Composite	BOD_5 / TSS	NH_3-N	Total Phosphorus	Metals	VOC	O&G	TPH	Cyanide	SVOC	Herbicides	Pes ticides			
2/2/22	8:45	NN02022-1		C				X										
2/2/22	10:15	NN02022-2		G					X									
2/2/22	10:15	NN02022-3		G						X								
2/2/22	10:15	NN02022-4		G								X						
2/2/22	8:45	NN02022-5		C									X					
2/2/22	8:45	NN02022-6		C										X				
2/2/22	8:45	NN02022-7		C											X			

All samples must be analyzed by approved analytical methods as specified in 40 CFR 136.

Date	Time	Relinquished By:	Received By:	Sample ID
2/2/22	11:02	Travis Newmeyer	Michael Kirkland	NN02022-1
2/2/22	12:00	Travis Newmeyer	CCO? 2.2.22 12:00	NN02022-2, NN02022-3, NN02022-4 NN02022-5, NN02022-6, NN02022-7

Client:	Cobb County Water System	**Client Sample ID:**	ND020222-8
Project Name:	Noonday WRF Cake	**Collection Date:**	2/2/2022 10:30:00 AM
Lab ID:	2202258-001	**Matrix:**	Solid

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
VOLATILES, TCLP SW1311/8260D				**(SW5030B)**				
1,1-Dichloroethene	BRL	0.10		mg/L	330460	20	02/09/2022 16:00	CM
1,2-Dichloroethane	BRL	0.10		mg/L	330460	20	02/09/2022 16:00	CM
2-Butanone	0.31	0.20		mg/L	330460	20	02/09/2022 16:00	CM
Benzene	BRL	0.10		mg/L	330460	20	02/09/2022 16:00	CM
Carbon tetrachloride	BRL	0.10		mg/L	330460	20	02/09/2022 16:00	CM
Chlorobenzene	BRL	0.10		mg/L	330460	20	02/09/2022 16:00	CM
Chloroform	BRL	0.10		mg/L	330460	20	02/09/2022 16:00	CM
Tetrachloroethene	BRL	0.10		mg/L	330460	20	02/09/2022 16:00	CM
Trichloroethene	BRL	0.10		mg/L	330460	20	02/09/2022 16:00	CM
Vinyl chloride	BRL	0.040		mg/L	330460	20	02/09/2022 16:00	CM
Surr: 4-Bromofluorobenzene	96	74.6-120		%REC	330460	20	02/09/2022 16:00	CM
Surr: Dibromofluoromethane	95.6	78.2-120		%REC	330460	20	02/09/2022 16:00	CM
Surr: Toluene-d8	97.7	83.1-120		%REC	330460	20	02/09/2022 16:00	CM
SEMIVOLATILES ORGANICS, TCLP SW1311/8270E				**(SW3510C)**				
1,4-Dichlorobenzene	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
2,4,5-Trichlorophenol	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
2,4,6-Trichlorophenol	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
2,4-Dinitrotoluene	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
Hexachlorobenzene	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
Hexachlorobutadiene	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
Hexachloroethane	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
m,p-Cresol	1.3	0.10		mg/L	330113	1	02/04/2022 20:07	YH
Nitrobenzene	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
o-Cresol	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
Pentachlorophenol	BRL	0.50		mg/L	330113	1	02/04/2022 20:07	YH
Pyridine	BRL	0.10		mg/L	330113	1	02/04/2022 20:07	YH
Cresols, Total	1.3	0.10		mg/L	330113	1	02/04/2022 20:07	YH
Surr: 2,4,6-Tribromophenol	48.4	57.8-139	S	%REC	330113	1	02/04/2022 20:07	YH
Surr: 2-Fluorobiphenyl	74.6	48.5-119		%REC	330113	1	02/04/2022 20:07	YH
Surr: 2-Fluorophenol	64.6	42.9-120		%REC	330113	1	02/04/2022 20:07	YH
Surr: 4-Terphenyl-d14	78.1	53.9-130		%REC	330113	1	02/04/2022 20:07	YH
Surr: Nitrobenzene-d5	75.1	51-125		%REC	330113	1	02/04/2022 20:07	YH
Surr: Phenol-d5	70.6	43.3-120		%REC	330113	1	02/04/2022 20:07	YH
PESTICIDES, TCLP SW1311/8081B				**(SW3510C)**				
Chlordane	BRL	0.0050		mg/L	330094	1	02/04/2022 13:59	ST
Endrin	BRL	0.0010		mg/L	330094	1	02/04/2022 13:59	ST
gamma-BHC	BRL	0.00050		mg/L	330094	1	02/04/2022 13:59	ST
Heptachlor	BRL	0.00050		mg/L	330094	1	02/04/2022 13:59	ST
Heptachlor epoxide	BRL	0.00050		mg/L	330094	1	02/04/2022 13:59	ST
Methoxychlor	BRL	0.0050		mg/L	330094	1	02/04/2022 13:59	ST
Toxaphene	BRL	0.050		mg/L	330094	1	02/04/2022 13:59	ST
Surr: Decachlorobiphenyl	55.5	47.4-120		%REC	330094	1	02/04/2022 13:59	ST
Surr: Tetrachloro-m-xylene	65.9	40.2-120		%REC	330094	1	02/04/2022 13:59	ST

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- F Analyzed in the lab which is a deviation from the method
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 10-Feb-22

Client:	Cobb County Water System	**Client Sample ID:**	ND020222-8
Project Name:	Noonday WRF Cake	**Collection Date:**	2/2/2022 10:30:00 AM
Lab ID:	2202258-001	**Matrix:**	Solid

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MERCURY, TCLP SW1311/7470A				**(SW7470A)**				
Mercury	BRL	0.00400		mg/L	330224	1	02/04/2022 17:12	GR
ICP METALS, TCLP SW1311/6010D				**(SW3010A)**				
Arsenic	BRL	0.250		mg/L	330227	1	02/04/2022 15:22	KB
Barium	BRL	0.500		mg/L	330227	1	02/04/2022 15:22	KB
Cadmium	BRL	0.0250		mg/L	330227	1	02/04/2022 15:22	KB
Chromium	BRL	0.0500		mg/L	330227	1	02/04/2022 15:22	KB
Lead	BRL	0.0500		mg/L	330227	1	02/04/2022 15:22	KB
Selenium	BRL	0.100		mg/L	330227	1	02/04/2022 15:22	KB
Silver	BRL	0.0250		mg/L	330227	1	02/04/2022 15:22	KB
HERBICIDES, TCLP SW1311/8151A				**(SW3510C)**				
2,4,5-TP (Silvex)	BRL	0.20		mg/L	330050	1	02/04/2022 19:37	UH
2,4-D	BRL	0.20		mg/L	330050	1	02/04/2022 19:37	UH
Surr: DCAA	63.5	50.1-120		%REC	330050	1	02/04/2022 19:37	UH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	F	Analyzed in the lab which is a deviation from the method
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

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ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **COBB COUNTY WATER SYSTEM** AES Work Order Number: **2202258**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	●	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	●	○		
5.	Custody seals intact on shipping container?	○	○	●		
6.	Temperature blanks present?	○	●	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	●	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	●	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	●	○	○		
10.	Sampler name and/or signature on COC?	●	○	○		
11.	Were all samples received within holding time?	●	○	○		
12.	TAT marked on the COC?	○	●	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 0.1 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). CW 2/2/22

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	●	○	○		
17.	Custody seals present on sample containers?	○	●	○		
18.	Custody seals intact on sample containers?	○	○	●		
19.	Do sample container labels match the COC?	●	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	●	○	○		
21.	Were all of the samples listed on the COC received?	●	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	●	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	●	○	○		
24.	Were samples received in appropriate containers?	●	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	●		
26.	Were trip blanks submitted?	○	○	●	listed on COC ☐ not listed on COC ☐	

27. Comments: _____

This section only applies to samples where pH can be checked at Sample Receipt.

I certify that I have completed sections 16-27 (dated initials). CW 2/2/22

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	○	○	●		
29.	Containers meet preservation guidelines?	○	○	●		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH. This also excludes metals by EPA 200.7, 200.8 and 245.1 which will be verified between 16 and 24 hours after preservation.

I certify that I have completed sections 28-30 (dated initials). CW 2/2/22

Locked

End of Report

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

June 05, 2023

Jeff Retzke
Denali Water Solutions

P.O. Box 3036
Russellville AR 72811

RE: RL Sutton WRC

Dear Jeff Retzke: Order No: 2305X34

Analytical Environmental Services, Inc. received 3 samples on May 26, 2023 1:00 pm for the analyses presented in following report.

"No problems were encountered during the analyses except as noted in the Case Narrative or by qualifiers in the report or QC Summary. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/22-06/30/23.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective through 06/30/23 and Total Coliforms/ E. coli, effective 04/25/23-04/24/24.
-AIHA LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/23.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Shawn Boyd

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive Atlanta GA 30340- 3906

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 2305X34

Date: 5/26/23 Page 1 of 1

COMPANY:	ADDRESS:
Denali Water	1001 Fraser Avenue Huntsville, AL 35801
PHONE: 256.503.4300	FAX:
SAMPLED BY: Jeff Retzke	SIGNATURE: Jeff Retzke

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Total PCBs												REMARKS	No # of Containers
							PRESERVATION (See codes)													
1	Noonday WRF	5/26/23	09:00		✓	WW	✓													1
2	Northwest WRF	5/26/23	10:00		✓	WW	✓													1
3	South Cobb WRF	5/26/23	11:00		✓	WW	✓													1
4																				
5																				
6																				
7																		✓		
8																				
9																				
10																				
11																				
12																				
13																				
14																				

ANALYSIS REQUESTED

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Matthew Mayo	5/26/1:00pm	1: LeilaDye	5.26.23 13:00
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: RL Sutton WRC

PROJECT #: COB

SITE ADDRESS: 5175 South Atlanta Road

SEND REPORT TO: jeff.retzke@denaliwater.com

INVOICE TO:
(IF DIFFERENT FROM ABOVE)

QUOTE #: _____ PO#: COB

RECEIPT

Total # of Containers: 3

Turnaround Time Request

- [✓] Standard 5 Business Days
- [ ] 2 Business Day Rush
- [ ] Next Business Day Rush
- [ ] Same Day Rush (auth req.)
- [ ] Other _____

STATE PROGRAM (if any): _____

E-mail? Y / N; Fax? Y / N

DATA PACKAGE: [ ] I [ ] II [ ] III [ ] IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD

OUT / / VIA:

IN / / VIA:

[✓] CLIENT [ ] FedEx [ ] UPS [ ] MAIL [ ] COURIER

[ ] GREYHOUND [ ] OTHER_____

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED WITH STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) WW=Wastewater DW=Drinking Water O = Other (specify)

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

Analytical Environmental Services, Inc

Date: 5-Jun-23

Client: Denali Water Solutions
Project: RL Sutton WRC
Lab ID: 2305X34

Case Narrative

PCB Waste Anlaysis by Method 8082A:

LCS-357182 recovery for Surrogate, Decachlorobiphenyl was outside control limits biased high.

Analytical Environmental Services, Inc **Date:** 5-Jun-23

Client:	Denali Water Solutions	**Client Sample ID:**	NOONDAY WRF
Project Name:	RL Sutton WRC	**Collection Date:**	5/26/2023 9:00:00 AM
Lab ID:	2305X34-001	**Matrix:**	Sludge

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
POLYCHLORINATED BIPHENYLS SW8082A				**(SW3580)**				
Aroclor 1016	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:51	ST
Aroclor 1221	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:51	ST
Aroclor 1232	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:51	ST
Aroclor 1242	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:51	ST
Aroclor 1248	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:51	ST
Aroclor 1254	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:51	ST
Aroclor 1260	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:51	ST
Surr: Decachlorobiphenyl	101	56-139		%REC	357182	1	05/31/2023 21:51	ST
Surr: Tetrachloro-m-xylene	113	56.5-139		%REC	357182	1	05/31/2023 21:51	ST

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	F	Analyzed in the lab which is a deviation from the method
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Client:	Denali Water Solutions	**Client Sample ID:**	NORTHWEST WRF
Project Name:	RL Sutton WRC	**Collection Date:**	5/26/2023 10:00:00 AM
Lab ID:	2305X34-002	**Matrix:**	Sludge

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
POLYCHLORINATED BIPHENYLS SW8082A				**(SW3580)**				
Aroclor 1016	BRL	1.0		mg/Kg	357182	1	05/31/2023 22:04	ST
Aroclor 1221	BRL	1.0		mg/Kg	357182	1	05/31/2023 22:04	ST
Aroclor 1232	BRL	1.0		mg/Kg	357182	1	05/31/2023 22:04	ST
Aroclor 1242	BRL	1.0		mg/Kg	357182	1	05/31/2023 22:04	ST
Aroclor 1248	BRL	1.0		mg/Kg	357182	1	05/31/2023 22:04	ST
Aroclor 1254	BRL	1.0		mg/Kg	357182	1	05/31/2023 22:04	ST
Aroclor 1260	BRL	1.0		mg/Kg	357182	1	05/31/2023 22:04	ST
Surr: Decachlorobiphenyl	98.7	56-139		%REC	357182	1	05/31/2023 22:04	ST
Surr: Tetrachloro-m-xylene	118	56.5-139		%REC	357182	1	05/31/2023 22:04	ST

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	F	Analyzed in the lab which is a deviation from the method
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Client:	Denali Water Solutions	**Client Sample ID:**	SOUTH COBB WRF
Project Name:	RL Sutton WRC	**Collection Date:**	5/26/2023 11:00:00 AM
Lab ID:	2305X34-003	**Matrix:**	Sludge

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
POLYCHLORINATED BIPHENYLS SW8082A				**(SW3580)**				
Aroclor 1016	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:15	ST
Aroclor 1221	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:15	ST
Aroclor 1232	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:15	ST
Aroclor 1242	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:15	ST
Aroclor 1248	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:15	ST
Aroclor 1254	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:15	ST
Aroclor 1260	BRL	1.0		mg/Kg	357182	1	05/31/2023 21:15	ST
Surr: Decachlorobiphenyl	50	56-139	S	%REC	357182	1	05/31/2023 21:15	ST
Surr: Tetrachloro-m-xylene	96.5	56.5-139		%REC	357182	1	05/31/2023 21:15	ST

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	F	Analyzed in the lab which is a deviation from the method
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Denali Water Solutions** AES Work Order Number: **2305X34**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	●	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	●	○		
5.	Custody seals intact on shipping container?	○	○	●		
6.	Temperature blanks present?	○	●	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	●	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	●	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	●	○	○		
10.	Sampler name and/or signature on COC?	●	○	○		
11.	Were all samples received within holding time?	●	○	○		
12.	TAT marked on the COC?	●	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 0.8 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). JD 5/30/23

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	●	○	○		
17.	Custody seals present on sample containers?	○	●	○		
18.	Custody seals intact on sample containers?	○	○	●		
19.	Do sample container labels match the COC?	●	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	●	○	○		
21.	Were all of the samples listed on the COC received?	●	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	●	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	●	○	○		
24.	Were samples received in appropriate containers?	●	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	●		
26.	Were trip blanks submitted?	○	○	●	listed on COC ☐ not listed on COC ☐	

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). JD 5/30/23

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	○	○	●		
29.	Containers meet preservation guidelines?	○	○	●		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH. This also excludes metals by EPA 200.7, 200.8 and 245.1 which will be verified between 16 and 24 hours after preservation.

I certify that I have completed sections 28-30 (dated initials). JD 5/30/23

Locked

Client: Denali Water Solutions
Project Name: RL Sutton WRC
Workorder: 2305X34

ANALYTICAL QC SUMMARY REPORT

BatchID: 357182

Sample ID: **MB-357182** Client ID: Units: **mg/Kg** Prep Date: **05/31/2023** Run No: **517643**
SampleType: **MBLK** TestCode: **POLYCHLORINATED BIPHENYLS** **SW8082A** BatchID: **357182** Analysis Date: **05/31/2023** Seq No: **12218030**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Aroclor 1016	BRL	1.0									
Aroclor 1221	BRL	1.0									
Aroclor 1232	BRL	1.0									
Aroclor 1242	BRL	1.0									
Aroclor 1248	BRL	1.0									
Aroclor 1254	BRL	1.0									
Aroclor 1260	BRL	1.0									
Surr: Decachlorobiphenyl	0.6600	0	0.5000		132	56	139				
Surr: Tetrachloro-m-xylene	0.6090	0	0.5000		122	56.5	139				

Sample ID: **LCS-357182** Client ID: Units: **mg/Kg** Prep Date: **05/31/2023** Run No: **517643**
SampleType: **LCS** TestCode: **POLYCHLORINATED BIPHENYLS** **SW8082A** BatchID: **357182** Analysis Date: **05/31/2023** Seq No: **12218031**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Aroclor 1016	6.187	1.0	5.000		124	75	138				
Aroclor 1260	6.793	1.0	5.000		136	75.5	138				
Surr: Decachlorobiphenyl	0.7253	0	0.5000		145	56	139				S
Surr: Tetrachloro-m-xylene	0.6696	0	0.5000		134	56.5	139				

Sample ID: **2305X34-003AMS** Client ID: **SOUTH COBB WRF** Units: **mg/Kg** Prep Date: **05/31/2023** Run No: **517643**
SampleType: **MS** TestCode: **POLYCHLORINATED BIPHENYLS** **SW8082A** BatchID: **357182** Analysis Date: **05/31/2023** Seq No: **12218033**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Aroclor 1016	6.825	1.0	5.000		137	62.3	137				
Aroclor 1260	6.942	1.0	5.000		139	66.7	139				
Surr: Decachlorobiphenyl	0.4910	0	0.5000		98.2	56	139				
Surr: Tetrachloro-m-xylene	0.6618	0	0.5000		132	56.5	139				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: RL Sutton WRC
Workorder: 2305X34

ANALYTICAL QC SUMMARY REPORT

BatchID: 357182

Sample ID: **2305X34-003AMSD** Client ID: **SOUTH COBB WRF** Units: **mg/Kg** Prep Date: **05/31/2023** Run No: **517643**
SampleType: **MSD** TestCode: **POLYCHLORINATED BIPHENYLS SW8082A** BatchID: **357182** Analysis Date: **05/31/2023** Seq No: **12218034**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Aroclor 1016	6.905	1.0	5.000		138	62.3	137	6.825	1.16	17.7	S
Aroclor 1260	7.159	1.0	5.000		143	66.7	139	6.942	3.07	19.1	S
Surr: Decachlorobiphenyl	0.5009	0	0.5000		100	56	139	0.4910	0	0	
Surr: Tetrachloro-m-xylene	0.6745	0	0.5000		135	56.5	139	0.6618	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

End of Report

Appendix D

bing maps

A 3740 N Highway 293, Kennesaw, GA 30144
B 9067 Lakewood Hwy, Mineral Bluff, GA 30559, United States
C 6234 W US Highway 64, Murphy, NC 28906, United States
D 318 Ocoee St, Copperhill, TN 37317

2 hr 13 min , 116 miles
Light traffic (10 min delay)
Via I-575 N, US-76 E
· Unpaved roads

Cobb County to Copperhill via Mineral Bluff and 60-spur (Murphey Highway)

A to B
1 hr 36 min (81.0 mi)

A 3740 N Highway 293, Kennesaw, GA 30144

↑	1.	Depart and head (**south**)	0.1 mi
↑	2.	Keep **right** to get onto **road**	0.1 mi
↰	3.	Turn **left**, then immediately turn **right** onto **Old 41 Hwy NW** • *Unpaved Road*	0.5 mi
↑	4.	Road name changes to **S Main St**	1.1 mi
↱	5.	Turn **right** onto **Cowan Rd**	1.3 mi
↑	6.	Keep **straight** to get onto **GA-92 / Cowan Rd** ▲ *Serious congestion*	8.3 mi
↰	7.	Take the ramp on the **left** and follow signs for **GA-5 North / I-575 North**	0.3 mi
575	8.	Merge onto **I-575 N / GA-5 N** ▲ *Serious congestion*	68.4 mi, 1 hr 9 min
↑	9.	Keep **left** to stay on **GA-60 / Lakewood Hwy**	0.1 mi
↰	10.	Turn **left** onto **GA-60 / Lakewood Hwy** Valero on the corner	0.7 mi

	11.	Arrive at **GA-60 / Lakewood Hwy** The last intersection before your destination is Marble City Rd If you reach Walker Circle, you've gone too far	

B 9067 Lakewood Hwy, Mineral Bluff, GA 30559, United States

B to C
16 min (13.7 mi)

B 9067 Lakewood Hwy, Mineral Bluff, GA 30559, United States

	1.	Head **northwest** on **GA-60 / Lakewood Hwy** toward Walker Circle	1.1 mi
↱	2.	Turn **right** onto **GA-60 Spur / Murphy Hwy**	7.5 mi
60	3.	Road name changes to **NC-60 / NC Highway 60** • *Entering North Carolina*	5.1 mi
↰	4.	Turn **left** onto **US-64 W / US-74 W / W US Highway 64**	98 ft
	5.	Arrive at **US-64 W / US-74 W / W US Highway 64** on the right The last intersection before your destination is NC-60 / NC Highway 60 If you reach Hilltop Rd, you've gone too far	

C 6234 W US Highway 64, Murphy, NC 28906, United States

C to D
21 min (20.8 mi)

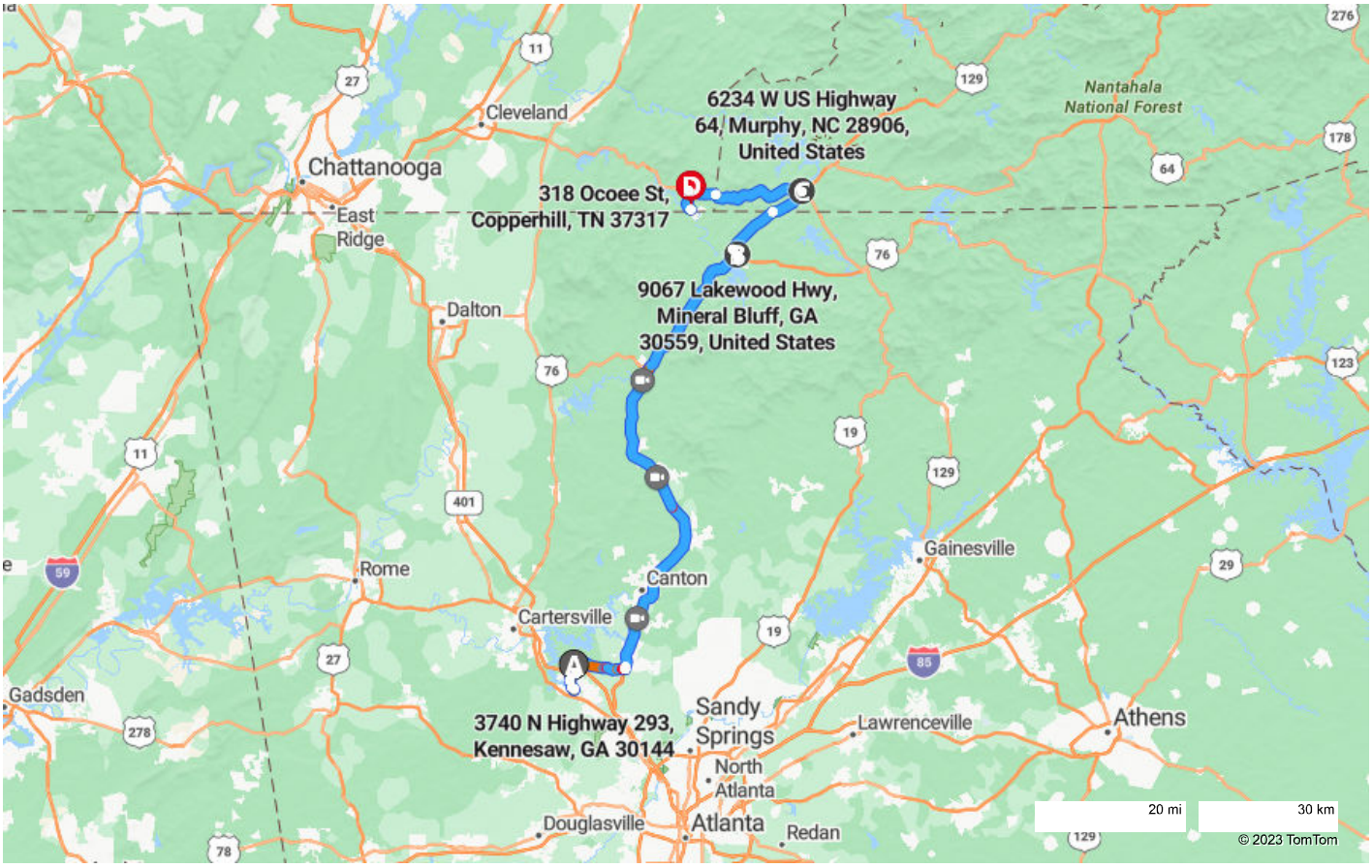
C 6234 W US Highway 64, Murphy, NC 28906, United States

	1.	Head **west** on **US-64 W / US-74 W / W US Highway 64** toward Hilltop Rd	13.9 mi, 13 min
↑	2.	Keep **straight** to stay on **US-64 W / US-74 W / TN-40 / Highway 64** ▲ *Minor congestion* • *Entering Tennessee*	3.9 mi
↰	3.	Turn **left** onto **TN-68 / Ocoee St**	52 ft
68	4.	Take the ramp on the **left** for **TN-68 / Ocoee St**	3.0 mi

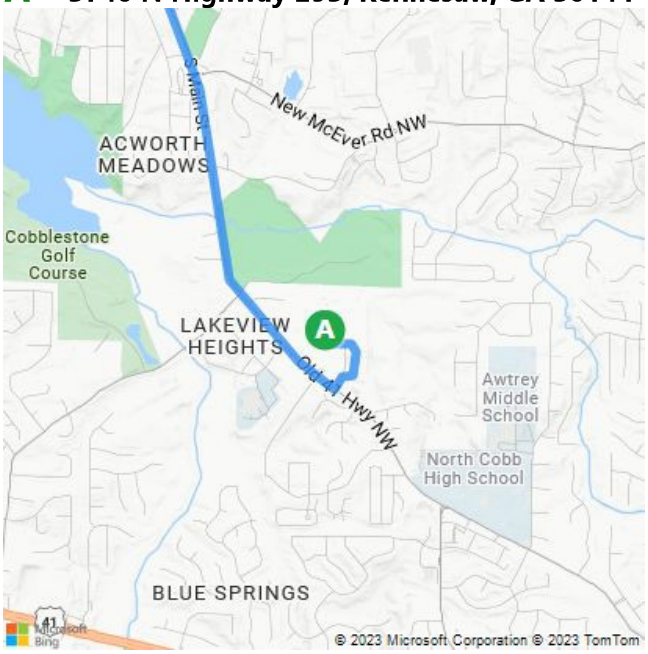
Arrive at **TN-68 / Ocoee St**

5. The last intersection before your destination is Staffordtown Rd
If you reach Baltic St, you've gone too far

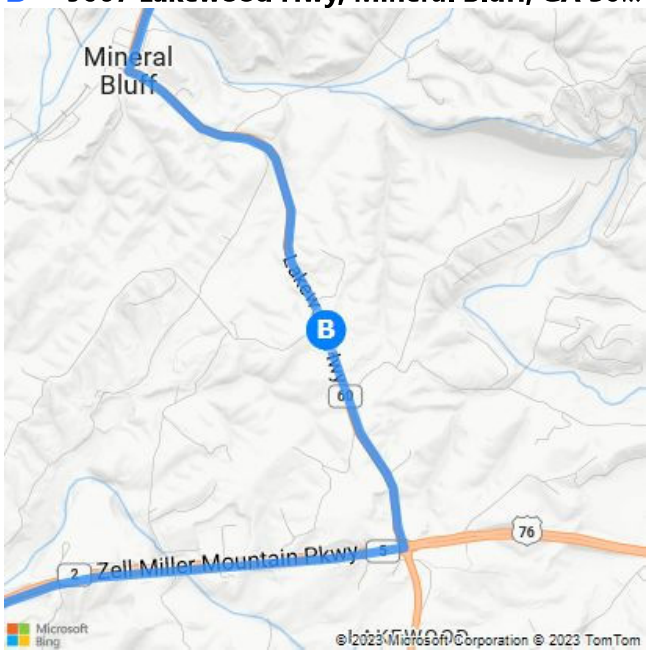
D **318 Ocoee St, Copperhill, TN 37317**



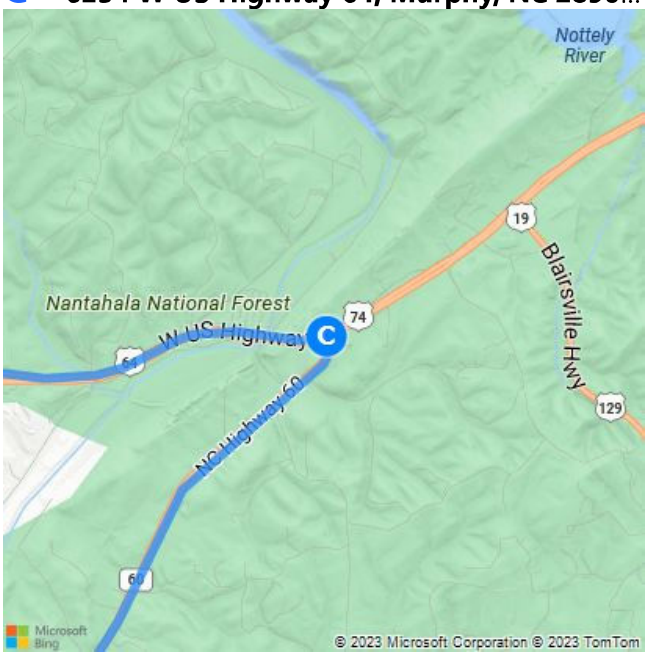
A 3740 N Highway 293, Kennesaw, GA 30144



B 9067 Lakewood Hwy, Mineral Bluff, GA 30...



C 6234 W US Highway 64, Murphy, NC 2890...



D 318 Ocoee St, Copperhill, TN 37317

bing maps

A 415 Shallowford Rd NE, Kennesaw, GA 30144
B 9067 Lakewood Hwy, Mineral Bluff, GA 30559, United States
C 6234 W US Highway 64, Murphy, NC 28906, United States
D 318 Ocoee St, Copperhill, TN 37317

2 hr 00 min , 108 miles
Light traffic (6 min delay)
Via I-575 N, US-76 E

Noonday to Copperhill via Mineral Bluff/Murphy Highway

A to B
1 hr 23 min (73.3 mi)

A 415 Shallowford Rd NE, Kennesaw, GA 30144

↑	1.	Depart and head (**west**)	59 ft
↰	2.	Turn **left** toward **Shallowford Rd NE**	0.3 mi
↰	3.	Turn **left** onto **Shallowford Rd NE**	0.5 mi
↱	4.	Turn **right** to stay on **Shallowford Rd NE**	0.5 mi
↰	5.	Turn **left** onto **Canton Rd**	0.8 mi
↖	6.	Bear **left** onto **Main st**	0.5 mi
↰	7.	Turn **left** onto **Stockwood Dr**	0.2 mi
↱	8.	Turn **right** onto **Professional Pkwy**	0.3 mi
↰	9.	Turn **left** onto **GA-92 / Highway 92**	0.7 mi
575	10.	Take the ramp on the **right** and follow signs for **GA-5 North / I-575 North** ▲ *Moderate congestion*	68.7 mi, 1 hr 8 min
↑	11.	Keep **left** to stay on **GA-60 / Lakewood Hwy**	0.1 mi
↰	12.	Turn **left** onto **GA-60 / Lakewood Hwy** Valero on the corner	0.7 mi

	13.	Arrive at **GA-60 / Lakewood Hwy** The last intersection before your destination is Marble City Rd If you reach Walker Circle, you've gone too far	

B 9067 Lakewood Hwy, Mineral Bluff, GA 30559, United States

B to C
16 min (13.7 mi)

B 9067 Lakewood Hwy, Mineral Bluff, GA 30559, United States

	1.	Head **northwest** on **GA-60 / Lakewood Hwy** toward Walker Circle	1.1 mi
↱	2.	Turn **right** onto **GA-60 Spur / Murphy Hwy**	7.5 mi
60	3.	Road name changes to **NC-60 / NC Highway 60** • *Entering North Carolina*	5.1 mi
↰	4.	Turn **left** onto **US-64 W / US-74 W / W US Highway 64**	98 ft
	5.	Arrive at **US-64 W / US-74 W / W US Highway 64** on the right The last intersection before your destination is NC-60 / NC Highway 60 If you reach Hilltop Rd, you've gone too far	

C 6234 W US Highway 64, Murphy, NC 28906, United States

C to D
21 min (20.8 mi)

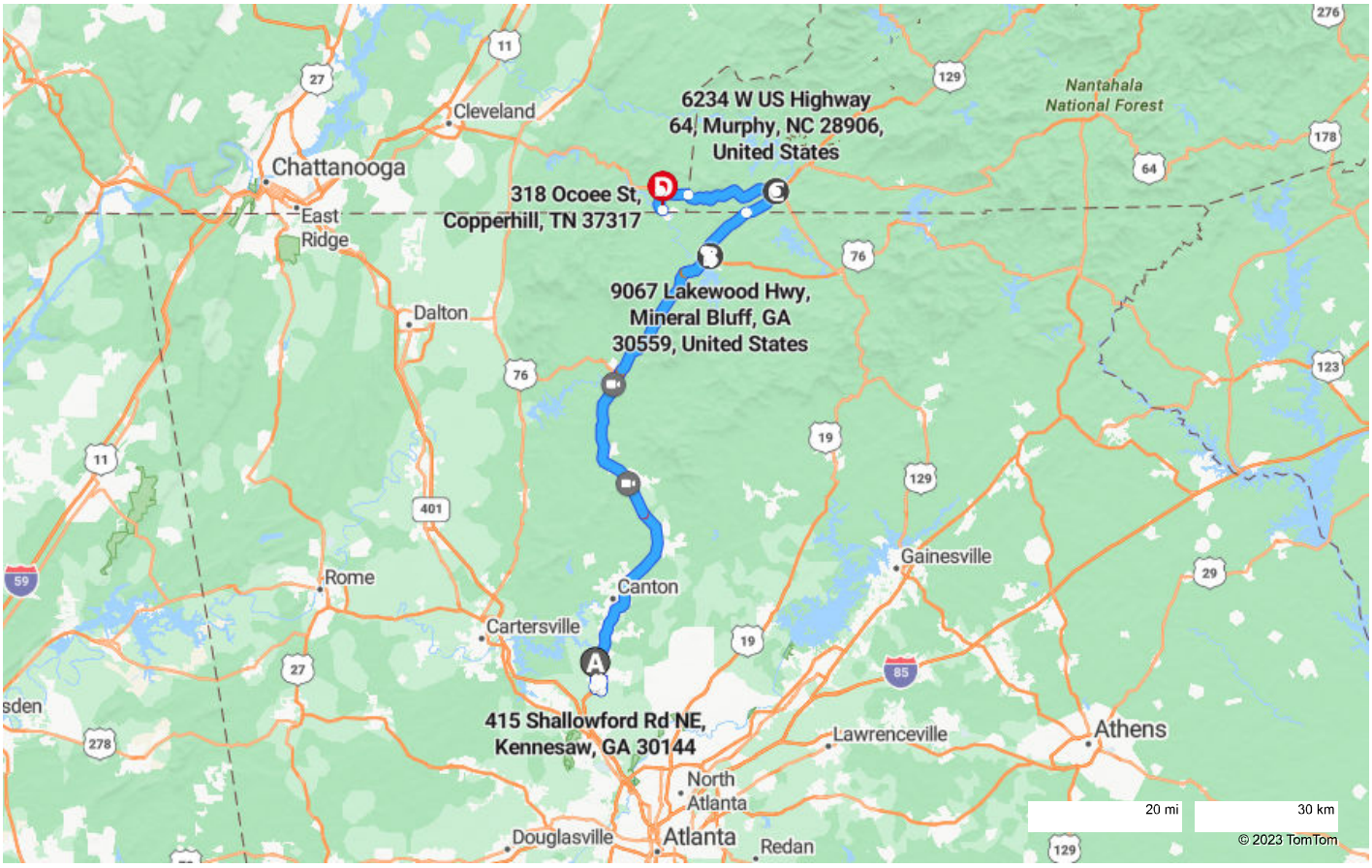
C 6234 W US Highway 64, Murphy, NC 28906, United States

	1.	Head **west** on **US-64 W / US-74 W / W US Highway 64** toward Hilltop Rd	13.9 mi, 13 min
↑	2.	Keep **straight** to stay on **US-64 W / US-74 W / TN-40 / Highway 64** ▲ *Minor congestion* • *Entering Tennessee*	3.9 mi
↰	3.	Turn **left** onto **TN-68 / Ocoee St**	52 ft
68	4.	Take the ramp on the **left** for **TN-68 / Ocoee St**	3.0 mi

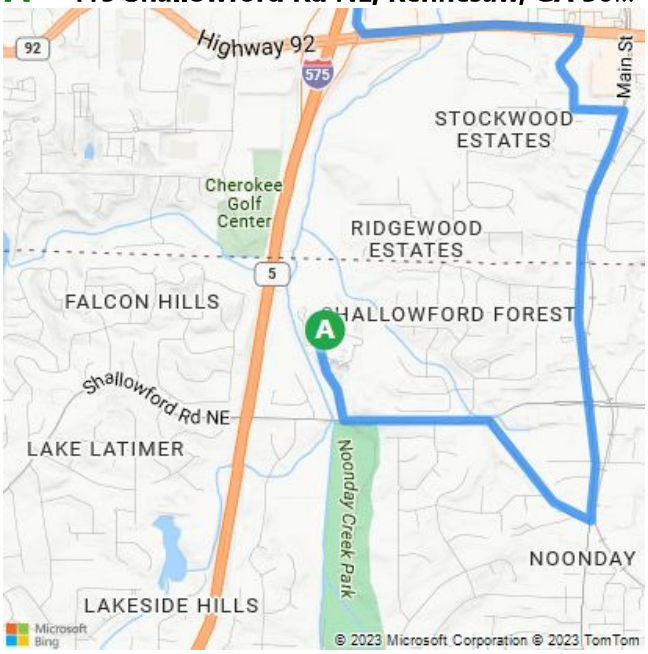
Arrive at **TN-68 / Ocoee St**

5. The last intersection before your destination is Staffordtown Rd
If you reach Baltic St, you've gone too far

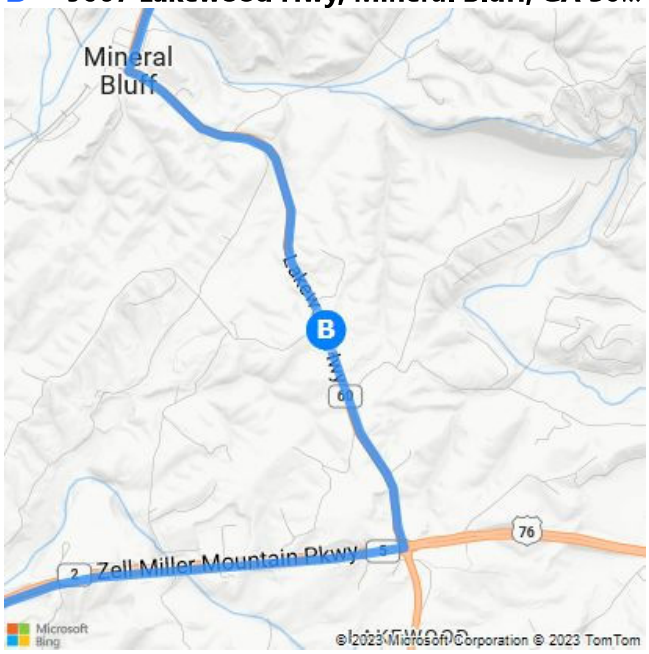
D **318 Ocoee St, Copperhill, TN 37317**



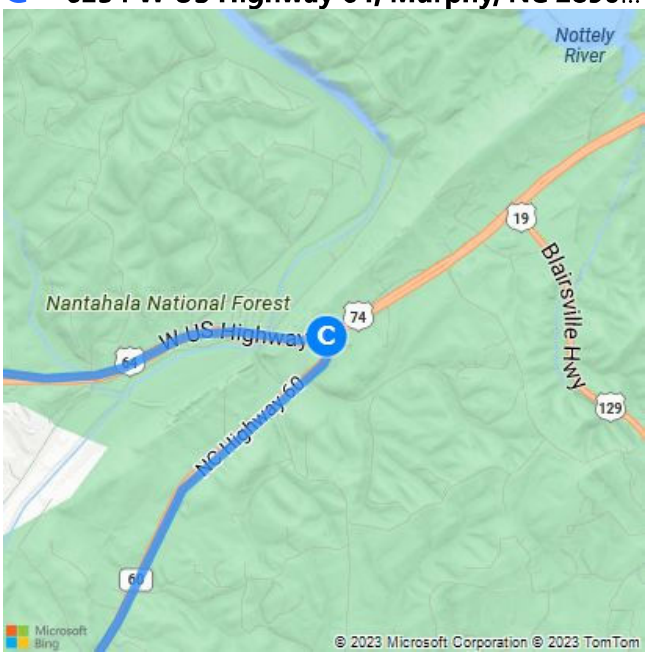
A 415 Shallowford Rd NE, Kennesaw, GA 30...



B 9067 Lakewood Hwy, Mineral Bluff, GA 30...



C **6234 W US Highway 64, Murphy, NC 2890...**



D **318 Ocoee St, Copperhill, TN 37317**

Appendix E

CEMENTECH Environmental

Cemen Tech Environmental (CTE) is a company that specializes in making volumetric proportioning and mixing equipment. As a subsidiary to Cemen Tech, Inc., CTE uses the 50 years of experience in engineering and building mobile concrete blending equipment and applies that knowledge over the last 25 years into engineering and building a robust and efficient Biosolids treatment systems. The advantages of the CTE systems include:

1. Volumetric Proportioning and Mixing: Using volumetric proportioning, the CTE unit insures uniform mixing throughout the day and is more reliable than weight belt systems for the proportioning of the different products being blended.
2. Live Bottom Bin (LBB): All CTE units come with a live bottom bin that is used to measure the biosolids into the blender. Since the CTE unit will always be sized to process more material than can be delivered, the LBB acts as a wide spot in the line. The LBB comes with a radar system that determines the amount of biosolids in the LBB. The CTE system in AUTO mode can automatically start and stop the system based on the amount of material in the LBB, which ensures the system only runs at its peak performance. The LBB can be loaded by conveyor and/or front-end loader.
3. Single Shaft High Speed Mixer Assembly With Elevation Control: The single shaft mixer uses different mixing bars to move and blend the materials thoughout the shaft. The operator of the CTE system can affect the mix by changing the amount of material going into the mixer; change the angle of the mixer; and by changing the speed of the mixer. By having this control, the operators can ensure proper mixing regardless of the type of biosolids and/or mineral products they are blending. The mixer assembly is designed to be removable for reconditioning or replacement. A second mixer assembly can be included as an option.
4. Allen Bradley Components: VFD's, PCL, and touch screen all come standard on new CTE units.
5. Multiple processes to achieve desired disinfection: The CTE unites can do Class B Alkaline stabilization and/or Class A Alkaline stabilization/sterilization. The CTE units are designed to handle a multiple of Alkaline reagents including but not limited too: Lime, Lime Kiln Dust, Cement Kiln Dust, Coal Fly Ash, Coal Bottom Ash, Fluidized Bed Ash, Desulfurization materials, wood ash, etc. The CTE system can blend Alkaline reagents at a low dose rate to achieve Class B (3-15% depending on the Alkaline reagent) and the next day blend 50% dose rate of Alkaline reagent to achieve Class A. Multiple Alternative Class A options are available including Alternative 2, Alternative 5-7, and Alternative 6. All of these options involve raising the

temperature of the Biosolids to a certain degree and raising the pH to greater than 12 for a certain duration. Alternative 2 and 6 also require a solids content to be reached (N-Viro process). Which Option is best for a particular City or Regional Authority would be best answered after a review of available alkaline regents and product marketing analysis. The CTE units can also be used for product conditioning/product development of previous disinfected sludge (Class A digestion or similar). Under this scenario, a class A Biosolid can be blended with any mineral material (sand, coal ash, compost, etc.) to make a more marketable product. The CTE unit could also always be on standby to do alkaline stabilization should the upstream disinfection go offline.

6. CTE Alkaline Reagent Silos: CTE offers various sized silos that all come with rotary vein feeder and trough augers to ensure measured delivery of all alkaline reagents.
7. Additional Live Bottom Bins: CTE offers 5 and 6 screw live bottom bins that can be loaded from a dump truck. CTE also offers various screw combinations and belt bottom LBBs that can be loaded by a front-end loader that can be used to measure other alkaline reagents or other by-products that cannot go into silos.
8. Additional Equipment: CTE has various partnerships and business relationships with a wide rage of equipment vendors that enable us to provide a complete system from conveyors to the newest Dryer technologies that combine Alkaline stabilization with a rotary kiln Dryer. Ask your representative about the N-Rich Process!
9. Various sized equipment: CTE makes stationary and mobile systems for any sized facility. Equipment size range from 10-product tons/hour to 75-product tons/hour per train.
10. Alkaline Reagents: From Lime to Coal Ash, choosing the right combination of alkaline reagents is vital to a successful program. CTE understands this and has a working relationship with many of the premier organizations that market and or produce these alkaline reagents to ensure your process is producing the best quality product and the best possible price.

Please contact Cemen Tech Environmental at 515-962-6736 or your local sales representative for any questions you have about CTE's line of environmental equipment.

Cemen Tech Environmental Systems

VERSATILE
Outstanding performance, reliable and stable.

DURABLE
Dependable, tough and built to last.

FLEXIBLE
Multiple applications.

CONTROL
Quality, quantity and schedule.

Cemen Tech Environmental System can receive, store, deliver, proportion and mix alkaline and/or mineral materials to produce or enhance Class A or Class B biosolids.

TECHNOLOGY	With decades of manufacturing experience, Cemen Tech units have the most advanced engineering for a trouble free, reliable, high quality system.
OPTIONS	Mixing and proportioning equipment, bulk storage silos, materials handling, conveyance systems and control are products we offer.
UNLIMITED APPLICATIONS	Fly ash conditioning, soil stabilization, stabilization of drilling muds, agricultural waste stabilization, and the mixing of various types of biomass for waste to energy production.
GLOBAL	Flexibility and stability make it the unit of choice for both domestic and international locations.

CONTACT TIM NICHOLSON
515.962.6717 OR TNICHOLSON@CEMENTECH.COM
VISIT CEMENTECHENVIRONMENTAL.COM

CEMENTECH Environmental

Appendix F

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

April 13, 2023

Jeff Retzke
Denali Water Solutions

P.O. Box 3036
Russellville AR 72811

RE: South Cobb WRC

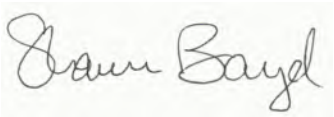
Dear Jeff Retzke: Order No: 2304730

Analytical Environmental Services, Inc. received 2 samples on April 7, 2023 11:50 am for the analyses presented in following report.

"No problems were encountered during the analyses except as noted in the Case Narrative or by qualifiers in the report or QC Summary. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits.
AES's accreditations are as follows:
-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/22-06/30/23.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective through 06/30/23 and Total Coliforms/ E. coli, effective 04/20/20-04/24/23.
-AIHA LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Metals and PCM Asbestos), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/23.
These results relate only to the items tested as received. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,



Shawn Boyd

Project Manager

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4889
www.aesatlanta.com

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive Atlanta GA 30340- 3906
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 2304730

Date: 4/6/23 Page 1 of 1

COMPANY:	ADDRESS:
Denali Water	1001 Fraser Avenue Huntsville, AL 35801
PHONE: 256.503.4300	FAX:
SAMPLED BY: Jeff Retzke	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	503 Metals	TKN, Ammonia N	NO3/NO2	Total P, Total K	pH	% total solid	% total volatile solids	Fecal Coliform	No # of Containers	REMARKS
	PRESERVATION (See codes)															
1	South Cobb WRC #1 Class A Biosolids	4/6/23	17:30		X	O	X	X	X	X	X	X	X	X		
2	Quick Lime	4/6/23	17:35		X	O	X									
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	4/7/11:50am	1:	4.7.23 1150
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: South Cobb WRC
PROJECT #: COB
SITE ADDRESS: 545 Rowland Road, Austell, GA 30158
SEND REPORT TO: jeff.retzke@denaliwater.com
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: _____ PO#: COB

RECEIPT
Total # of Containers

Turnaround Time Request
- ☐ Standard 5 Business Days
- ☐ 2 Business Day Rush
- ☑ Next Business Day Rush
- ☐ Same Day Rush **(auth req.)**
- ☐ Other _____

STATE PROGRAM (if any): _____
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: ☐ I ☐ II ☐ III ☐ IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
☑ CLIENT ☐ FedEx ☐ UPS ☐ MAIL ☐ COURIER
☐ GREYHOUND ☐ OTHER_____

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED WITH STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) WW=Wastewater DW=Drinking Water O = Other (specify)
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

Client: Denali Water Solutions
Project: South Cobb WRC
Lab ID: 2304730

Case Narrative

Sample Receiving Nonconformance:

Sample(s) for pH analysis by Method SW9045D were received and analyzed outside Method specified holding time of "immediate or 15 minutes".

A sterile sample container for Fecal Coliform was not received. Sample was split from the container provided at the laboratory.

Fecal Coliform in Sludge Analysis by Method SM9222D_S:

Due to sample matrix, sample 2304730-001A required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc **Date:** 13-Apr-23

Client:	Denali Water Solutions	**Client Sample ID:**	South Cobb WRC#1
Project Name:	South Cobb WRC	**Collection Date:**	4/6/2023 5:30:00 PM
Lab ID:	2304730-001	**Matrix:**	Sludge

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total, Volatile, and Fixed Residue by SM2540G-2015				**(SM2540G)**				
% Total Solids	51.2	0.00100		wt%	354137	1	04/07/2023 16:10	SK
% Volatile Solids	18.9	0.00100		wt%	354137	1	04/07/2023 16:10	SK
Total Phosphorus, soils E365.1				**(E365.1)**				
Phosphorus, Total (As P)	5750	191		mg/Kg-dry	354160	10	04/11/2023 15:22	MS
TOTAL MERCURY SW7471B				**(SW7471B)**				
Mercury	BRL	0.188		mg/Kg-dry	354188	1	04/10/2023 13:20	GR
Nitrogen, total Kjeldahl (TKN) Extractable E351.2M				**(E351.2 MOD)**				
Nitrogen, total Kjeldahl(TKN)Extractable	23400	977		mg/Kg-dry	354168	10	04/10/2023 13:08	JO
Nitrogen, Nitrate-Nitrite (as N) Ext. E353.2				**(E353.2 MOD)**				
Nitrogen, Nitrate-Nitrite(as N)Extractable	22.6	9.48		mg/Kg-dry	354165	1	04/10/2023 13:29	AA
Nitrogen, Ammonia (as N) Extractable E350.1 MOD				**(E350.1)**				
Nitrogen, Ammonia (As N) Extractable	1660	191		mg/Kg-dry	354206	10	04/10/2023 15:00	TL
Laboratory Hydrogen Ion (pH) SW9045D				**(SW9045D)**				
pH	12.3	0.01	H	pH Units	354235	1	04/10/2023 13:03	AH
Sample Temperature degrees C	21.8	0.10	H	pH Units	354235	1	04/10/2023 13:03	AH
Fecal Coliform-Soil/Sludge SM9222D-2015								
Fecal Coliform, (MF)	BRL	19.2		Colonies/gr-dry	R513184	100	04/07/2023 14:12	TN
METALS, TOTAL SW6010D				**(SW3050B)**				
Arsenic	BRL	2.99		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Cadmium	BRL	2.99		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Calcium	288000	5980		mg/Kg-dry	354068	100	04/10/2023 16:26	EO
Chromium	25.4	2.99		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Copper	100	2.99		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Iron	38500	5980		mg/Kg-dry	354068	100	04/10/2023 16:26	EO
Lead	6.89	5.98		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Magnesium	4190	59.8		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Manganese	113	5.98		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Molybdenum	BRL	5.98		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Nickel	9.01	5.98		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Potassium	1250	120		mg/Kg-dry	354068	1	04/10/2023 18:41	EO
Selenium	BRL	4.19		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
Zinc	145	5.98		mg/Kg-dry	354068	1	04/07/2023 17:56	EO
PERCENT MOISTURE D2216								
Percent Moisture	48.8	0		wt%	R513249	1	04/07/2023 16:10	SK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	F	Analyzed in the lab which is a deviation from the method
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 13-Apr-23

Client:	Denali Water Solutions	**Client Sample ID:**	Quick Lime
Project Name:	South Cobb WRC	**Collection Date:**	4/6/2023 5:35:00 PM
Lab ID:	2304730-002	**Matrix:**	Sludge

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TOTAL MERCURY SW7471B					**(SW7471B)**			
Mercury	BRL	0.0922		mg/Kg-dry	354188	1	04/10/2023 13:23	GR
METALS, TOTAL SW6010D					**(SW3050B)**			
Arsenic	BRL	1.92		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Cadmium	BRL	1.92		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Calcium	484000	3840		mg/Kg-dry	354068	100	04/10/2023 16:29	EO
Chromium	BRL	1.92		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Copper	BRL	1.92		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Iron	571	38.4		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Lead	BRL	3.84		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Magnesium	13400	3840		mg/Kg-dry	354068	100	04/10/2023 16:29	EO
Manganese	17.9	3.84		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Molybdenum	BRL	3.84		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Nickel	BRL	3.84		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Potassium	733	76.8		mg/Kg-dry	354068	1	04/10/2023 18:44	EO
Selenium	BRL	2.69		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
Zinc	BRL	3.84		mg/Kg-dry	354068	1	04/07/2023 17:59	EO
PERCENT MOISTURE D2216								
Percent Moisture	0	0		wt%	R513482	1	04/11/2023 17:00	AG

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- F Analyzed in the lab which is a deviation from the method
- < Less than Result value
- J Estimated value detected below Reporting Limit

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Denali Water Solutions** AES Work Order Number: **2304730**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	●	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	●	○		
5.	Custody seals intact on shipping container?	○	○	●		
6.	Temperature blanks present?	○	●	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	●	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	●	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	●	○	○		
10.	Sampler name and/or signature on COC?	●	○	○		
11.	Were all samples received within holding time?	○	●	○		
12.	TAT marked on the COC?	●	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 2.8 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). MJ 4/7/23

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	●	○	○		
17.	Custody seals present on sample containers?	○	●	○		
18.	Custody seals intact on sample containers?	○	○	●		
19.	Do sample container labels match the COC?	●	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	●	○	○		
21.	Were all of the samples listed on the COC received?	●	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	●	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	●	○	○		
24.	Were samples received in appropriate containers?	○	●	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	○	○	●		
26.	Were trip blanks submitted?	○	○	●	listed on COC ☐ not listed on COC ☐	

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). MJ 4/7/23

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	○	○	●		
29.	Containers meet preservation guidelines?	○	○	●		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH. This also excludes metals by EPA 200.7, 200.8 and 245.1 which will be verified between 16 and 24 hours after preservation.

I certify that I have completed sections 28-30 (dated initials). MJ 4/7/23

Locked

Checklist 7.9.20 Rev 3

Analytical Environmental Services, Inc

Date: 12-Apr-23

Client: Denali Water Solutions
Project Name: South Cobb WRC
Lab Order: 2304730

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
2304730-001A	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	Fecal Coliform-Soil/Sludge			04/07/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	Nitrogen, Ammonia (as N) Extractable		4/10/2023 12:12:00PM	04/10/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	Nitrogen, total Kjeldahl (TKN) Extractable		4/10/2023 8:15:00AM	04/10/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	Nitrogen, Nitrite (as N) Extractable		4/10/2023 7:20:51AM	04/10/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	Nitrogen, Nitrate-Nitrite (as N) Extractable		4/10/2023 7:20:51AM	04/10/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	Total Phosphorus, soils		4/11/2023 8:45:00AM	04/11/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	TOTAL METALS BY ICP		4/7/2023 2:52:00PM	04/07/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	TOTAL METALS BY ICP		4/7/2023 2:52:00PM	04/10/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	MERCURY		4/10/2023 11:32:00AM	04/10/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	Laboratory Hydrogen Ion (pH)		4/10/2023 10:30:00AM	04/10/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	PERCENT MOISTURE			04/07/2023
2304730-001B	South Cobb WRC#1	4/6/2023 5:30:00PM	Sludge	Residue, Total, Volatile and Fixed (SM254		4/7/2023 4:10:00PM	04/07/2023
2304730-002A	Quick Lime	4/6/2023 5:35:00PM	Sludge	TOTAL METALS BY ICP		4/7/2023 2:52:00PM	04/07/2023
2304730-002A	Quick Lime	4/6/2023 5:35:00PM	Sludge	TOTAL METALS BY ICP		4/7/2023 2:52:00PM	04/10/2023
2304730-002A	Quick Lime	4/6/2023 5:35:00PM	Sludge	MERCURY		4/10/2023 11:32:00AM	04/10/2023
2304730-002A	Quick Lime	4/6/2023 5:35:00PM	Sludge	PERCENT MOISTURE			04/11/2023

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354068

Sample ID: **MB-354068** Client ID: Units: **mg/Kg** Prep Date: **04/07/2023** Run No: **513129**
SampleType: **MBLK** TestCode: **METALS, TOTAL SW6010D** BatchID: **354068** Analysis Date: **04/07/2023** Seq No: **12079701**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	BRL	2.50									
Cadmium	BRL	2.00									
Calcium	BRL	50.0									
Chromium	BRL	2.00									
Copper	BRL	2.50									
Iron	BRL	50.0									
Lead	BRL	5.00									
Magnesium	BRL	50.0									
Manganese	BRL	5.00									
Molybdenum	BRL	5.00									
Nickel	BRL	5.00									
Potassium	BRL	100									
Selenium	BRL	2.00									
Zinc	BRL	5.00									

Sample ID: **LCS-354068** Client ID: Units: **mg/Kg** Prep Date: **04/07/2023** Run No: **513129**
SampleType: **LCS** TestCode: **METALS, TOTAL SW6010D** BatchID: **354068** Analysis Date: **04/07/2023** Seq No: **12079702**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	46.28	2.50	50.00		92.6	80	120				
Cadmium	47.41	2.50	50.00		94.8	80	120				
Calcium	485.1	50.0	500.0		97.0	80	120				
Chromium	49.50	2.50	50.00		99.0	80	120				
Copper	49.97	2.50	50.00		99.9	80	120				
Iron	484.2	50.0	500.0		96.8	80	120				
Lead	47.86	5.00	50.00		95.7	80	120				
Magnesium	473.1	50.0	500.0		94.6	80	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354068

Sample ID: **LCS-354068** Client ID: Units: **mg/Kg** Prep Date: **04/07/2023** Run No: **513129**
SampleType: **LCS** TestCode: **METALS, TOTAL SW6010D** BatchID: **354068** Analysis Date: **04/07/2023** Seq No: **12079702**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Manganese	49.12	5.00	50.00		98.2	80	120				
Molybdenum	47.92	5.00	50.00		95.8	80	120				
Nickel	48.18	5.00	50.00		96.4	80	120				
Potassium	481.4	100	500.0		96.3	80	120				
Selenium	42.14	3.50	50.00		84.3	80	120				
Zinc	46.52	5.00	50.00		93.0	80	120				

Sample ID: **2304543-001BMS** Client ID: Units: **mg/Kg-dry** Prep Date: **04/07/2023** Run No: **513129**
SampleType: **MS** TestCode: **METALS, TOTAL SW6010D** BatchID: **354068** Analysis Date: **04/07/2023** Seq No: **12079704**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	37.62	2.22	44.48		84.6	75	125				
Cadmium	40.39	2.22	44.48	0.3933	89.9	75	125				
Calcium	2069	44.5	444.8	1460	137	75	125				S
Chromium	244.7	2.22	44.48	197.0	107	75	125				
Copper	138.3	2.22	44.48	89.29	110	75	125				
Lead	55.27	4.45	44.48	17.34	85.3	75	125				
Magnesium	6156	44.5	444.8	5538	139	75	125				S
Manganese	822.4	4.45	44.48	683.7	312	75	125				S
Molybdenum	39.72	4.45	44.48	1.698	85.5	75	125				
Nickel	132.4	4.45	44.48	88.13	99.5	75	125				
Potassium	937.5	89.0	444.8	460.9	107	75	125				
Selenium	30.83	3.11	44.48		69.3	75	125				S
Zinc	162.2	4.45	44.48	120.4	93.9	75	125				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354068

Sample ID: **2304543-001BMS** Client ID: Units: **mg/Kg-dry** Prep Date: **04/07/2023** Run No: **513129**
SampleType: **MS** TestCode: **METALS, TOTAL SW6010D** BatchID: **354068** Analysis Date: **04/10/2023** Seq No: **12083339**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Iron	40520	890	444.8	38060	554	75	125				S

Sample ID: **2304543-001BMSD** Client ID: Units: **mg/Kg-dry** Prep Date: **04/07/2023** Run No: **513129**
SampleType: **MSD** TestCode: **METALS, TOTAL SW6010D** BatchID: **354068** Analysis Date: **04/07/2023** Seq No: **12079705**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	39.10	2.22	44.48		87.9	75	125	37.62	3.86	20	
Cadmium	41.87	2.22	44.48	0.3933	93.2	75	125	40.39	3.60	20	
Calcium	1908	44.5	444.8	1460	101	75	125	2069	8.12	20	
Chromium	243.6	2.22	44.48	197.0	105	75	125	244.7	0.461	20	
Copper	135.6	2.22	44.48	89.29	104	75	125	138.3	1.95	20	
Lead	55.31	4.45	44.48	17.34	85.4	75	125	55.27	0.064	20	
Magnesium	6367	44.5	444.8	5538	186	75	125	6156	3.37	20	S
Manganese	628.7	4.45	44.48	683.7	-124	75	125	822.4	26.7	20	SR
Molybdenum	34.01	4.45	44.48	1.698	72.6	75	125	39.72	15.5	20	S
Nickel	126.5	4.45	44.48	88.13	86.3	75	125	132.4	4.53	20	
Potassium	960.5	89.0	444.8	460.9	112	75	125	937.5	2.42	20	
Selenium	32.01	3.11	44.48		72.0	75	125	30.83	3.76	20	S
Zinc	159.0	4.45	44.48	120.4	86.8	75	125	162.2	1.96	20	

Sample ID: **2304543-001BMSD** Client ID: Units: **mg/Kg-dry** Prep Date: **04/07/2023** Run No: **513129**
SampleType: **MSD** TestCode: **METALS, TOTAL SW6010D** BatchID: **354068** Analysis Date: **04/10/2023** Seq No: **12083340**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Iron	39560	890	444.8	38060	338	75	125	40520	2.40	20	S

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354137

Sample ID: **MB-354137** Client ID: Units: **wt%** Prep Date: **04/07/2023** Run No: **513249**
SampleType: **MBLK** TestCode: **Total, Volatile, and Fixed Residue by SM2540G-2015** BatchID: **354137** Analysis Date: **04/07/2023** Seq No: **12082603**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
% Total Solids	BRL	0.00100									
% Volatile Solids	BRL	0.00100									

Sample ID: **2304730-001BDUP** Client ID: **South Cobb WRC#1** Units: **wt%** Prep Date: **04/07/2023** Run No: **513249**
SampleType: **DUP** TestCode: **Total, Volatile, and Fixed Residue by SM2540G-2015** BatchID: **354137** Analysis Date: **04/07/2023** Seq No: **12082605**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
% Total Solids	51.05	0.00100						51.22	0.331	20	
% Volatile Solids	18.87	0.00100						18.88	0.085	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354160

Sample ID: **MB-354160**	Client ID:				Units: **mg/Kg**		Prep Date: **04/11/2023**		Run No: **513361**
SampleType: **MBLK**	TestCode: **Total Phosphorus, soils** **E365.1**				BatchID: **354160**		Analysis Date: **04/11/2023**		Seq No: **12085603**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	BRL	10.0									

Sample ID: **LCS-354160**	Client ID:				Units: **mg/Kg**		Prep Date: **04/11/2023**		Run No: **513361**
SampleType: **LCS**	TestCode: **Total Phosphorus, soils** **E365.1**				BatchID: **354160**		Analysis Date: **04/11/2023**		Seq No: **12085604**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	390.6	20.0	400.0		97.6	90	110				

Sample ID: **2304731-001BMS**	Client ID:				Units: **mg/Kg**		Prep Date: **04/11/2023**		Run No: **513361**
SampleType: **MS**	TestCode: **Total Phosphorus, soils** **E365.1**				BatchID: **354160**		Analysis Date: **04/11/2023**		Seq No: **12085606**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	3916	98.0	391.8	3546	94.3	90	110				

Sample ID: **2304731-001BMSD**	Client ID:				Units: **mg/Kg**		Prep Date: **04/11/2023**		Run No: **513361**
SampleType: **MSD**	TestCode: **Total Phosphorus, soils** **E365.1**				BatchID: **354160**		Analysis Date: **04/11/2023**		Seq No: **12085607**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	3946	102	407.7	3546	98.1	90	110	3916	0.769	19.4	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354165

Sample ID: **MB-354165**	Client ID:			Units: **mg/Kg**	Prep Date: **04/10/2023**	Run No: **513204**
SampleType: **MBLK**	TestCode: **Nitrogen, Nitrate-Nitrite (as N) Ext. E353.2**			BatchID: **354165**	Analysis Date: **04/10/2023**	Seq No: **12082152**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite(as N)Extracta	BRL	5.00									

Sample ID: **LCS-354165**	Client ID:			Units: **mg/Kg**	Prep Date: **04/10/2023**	Run No: **513204**
SampleType: **LCS**	TestCode: **Nitrogen, Nitrate-Nitrite (as N) Ext. E353.2**			BatchID: **354165**	Analysis Date: **04/10/2023**	Seq No: **12082153**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite(as N)Extracta	50.90	5.00	50.00		102	90	110				

Sample ID: **2304730-001BMS**	Client ID: **South Cobb WRC#1**			Units: **mg/Kg-dry**	Prep Date: **04/10/2023**	Run No: **513204**
SampleType: **MS**	TestCode: **Nitrogen, Nitrate-Nitrite (as N) Ext. E353.2**			BatchID: **354165**	Analysis Date: **04/10/2023**	Seq No: **12082164**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite(as N)Extracta	200.9	94.8	189.6	22.56	94.1	90	110				

Sample ID: **2304730-001BMSD**	Client ID: **South Cobb WRC#1**			Units: **mg/Kg-dry**	Prep Date: **04/10/2023**	Run No: **513204**
SampleType: **MSD**	TestCode: **Nitrogen, Nitrate-Nitrite (as N) Ext. E353.2**			BatchID: **354165**	Analysis Date: **04/10/2023**	Seq No: **12082165**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite(as N)Extracta	208.5	94.8	189.6	22.56	98.1	90	110	200.9	3.70	30	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354168

Sample ID: **MB-354168**	Client ID:				Units: **mg/Kg**		Prep Date: **04/10/2023**		Run No: **513238**	
SampleType: **MBLK**	TestCode: **Nitrogen, total Kjeldahl (TKN) Extractable E351.2M**				BatchID: **354168**		Analysis Date: **04/10/2023**		Seq No: **12082416**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, total Kjeldahl(TKN)Extracta	BRL	50.0									

Sample ID: **LCS-354168**	Client ID:				Units: **mg/Kg**		Prep Date: **04/10/2023**		Run No: **513238**	
SampleType: **LCS**	TestCode: **Nitrogen, total Kjeldahl (TKN) Extractable E351.2M**				BatchID: **354168**		Analysis Date: **04/10/2023**		Seq No: **12082417**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, total Kjeldahl(TKN)Extracta	996.3	50.0	1000		99.6	90	110				

Sample ID: **2304731-001BMS**	Client ID:				Units: **mg/Kg**		Prep Date: **04/10/2023**		Run No: **513238**	
SampleType: **MS**	TestCode: **Nitrogen, total Kjeldahl (TKN) Extractable E351.2M**				BatchID: **354168**		Analysis Date: **04/10/2023**		Seq No: **12082432**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, total Kjeldahl(TKN)Extracta	6311	514	1027	12470	-600	90	110				S

Sample ID: **2304731-001BMSD**	Client ID:				Units: **mg/Kg**		Prep Date: **04/10/2023**		Run No: **513551**	
SampleType: **MSD**	TestCode: **Nitrogen, total Kjeldahl (TKN) Extractable E351.2M**				BatchID: **354168**		Analysis Date: **04/12/2023**		Seq No: **12090339**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, total Kjeldahl(TKN)Extracta	6475	489	978.0	12470	-613	90	110	6311	2.56	29.9	S

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354188

Sample ID: **MB-354188**	Client ID:				Units: **mg/Kg**		Prep Date: **04/10/2023**		Run No: **513226**
SampleType: **MBLK**	TestCode: **TOTAL MERCURY SW7471B**				BatchID: **354188**		Analysis Date: **04/10/2023**		Seq No: **12082281**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	BRL	0.100									

Sample ID: **LCS-354188**	Client ID:				Units: **mg/Kg**		Prep Date: **04/10/2023**		Run No: **513226**
SampleType: **LCS**	TestCode: **TOTAL MERCURY SW7471B**				BatchID: **354188**		Analysis Date: **04/10/2023**		Seq No: **12082282**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.3898	0.100	0.4000		97.4	80	120				

Sample ID: **2304437-001AMS**	Client ID:				Units: **mg/Kg**		Prep Date: **04/10/2023**		Run No: **513226**
SampleType: **MS**	TestCode: **TOTAL MERCURY SW7471B**				BatchID: **354188**		Analysis Date: **04/10/2023**		Seq No: **12082284**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.3520	0.0967	0.3869		91.0	80	120				

Sample ID: **2304437-001AMSD**	Client ID:				Units: **mg/Kg**		Prep Date: **04/10/2023**		Run No: **513226**
SampleType: **MSD**	TestCode: **TOTAL MERCURY SW7471B**				BatchID: **354188**		Analysis Date: **04/10/2023**		Seq No: **12082285**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.3731	0.0970	0.3880		96.2	80	120	0.3520	5.82	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354206

Sample ID: **MB-354206**	Client ID:			Units: **mg/Kg**	Prep Date: **04/10/2023**	Run No: **513212**
SampleType: **MBLK**	TestCode: **Nitrogen, Ammonia (as N) Extractable E350.1 MOD**			BatchID: **354206**	Analysis Date: **04/10/2023**	Seq No: **12082510**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N) Extractable	BRL	10.0									

Sample ID: **LCS-354206**	Client ID:			Units: **mg/Kg**	Prep Date: **04/10/2023**	Run No: **513212**
SampleType: **LCS**	TestCode: **Nitrogen, Ammonia (as N) Extractable E350.1 MOD**			BatchID: **354206**	Analysis Date: **04/10/2023**	Seq No: **12082511**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N) Extractable	107.9	10.0	100.0		108	90	110				

Sample ID: **2304730-001BMS**	Client ID: **South Cobb WRC#1**			Units: **mg/Kg-dry**	Prep Date: **04/10/2023**	Run No: **513212**
SampleType: **MS**	TestCode: **Nitrogen, Ammonia (as N) Extractable E350.1 MOD**			BatchID: **354206**	Analysis Date: **04/10/2023**	Seq No: **12082524**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N) Extractable	1543	186	185.9	1524	10.7	90	110				S

Sample ID: **2304730-001BMSD**	Client ID: **South Cobb WRC#1**			Units: **mg/Kg-dry**	Prep Date: **04/10/2023**	Run No: **513212**
SampleType: **MSD**	TestCode: **Nitrogen, Ammonia (as N) Extractable E350.1 MOD**			BatchID: **354206**	Analysis Date: **04/10/2023**	Seq No: **12082525**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N) Extractable	1669	190	189.6	1524	76.9	90	110	1543	7.84	22.4	S

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: 354235

Sample ID: **LCS-354235**	Client ID:	Units: **pH Units**	Prep Date: **04/10/2023**	Run No: **513231**
SampleType: **LCS**	TestCode: **Laboratory Hydrogen Ion (pH) SW9045D**	BatchID: **354235**	Analysis Date: **04/10/2023**	Seq No: **12082133**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
pH	6.976	0.01	7.000		99.7	90	110				H

Sample ID: **2304730-001BDUP**	Client ID: **South Cobb WRC#1**	Units: **pH Units**	Prep Date: **04/10/2023**	Run No: **513231**
SampleType: **DUP**	TestCode: **Laboratory Hydrogen Ion (pH) SW9045D**	BatchID: **354235**	Analysis Date: **04/10/2023**	Seq No: **12082136**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
pH	12.22	0.01						12.27	0.400	10	H
Sample Temperature degrees C	22.20	0.10						21.80	1.82	0	H

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: R513184

Sample ID: **MB-R513184** Client ID: Units: **Colonies/gr-dry** Prep Date: Run No: **513184**
SampleType: **MBLK** TestCode: **Fecal Coliform-Soil/Sludge** **SM9222D-2015** BatchID: **R513184** Analysis Date: **04/07/2023** Seq No: **12080702**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fecal Coliform, (MF)	BRL	0.100									

Sample ID: **MB-R513184-2** Client ID: Units: **Colonies/gr-dry** Prep Date: Run No: **513184**
SampleType: **MBLK** TestCode: **Fecal Coliform-Soil/Sludge** **SM9222D-2015** BatchID: **R513184** Analysis Date: **04/07/2023** Seq No: **12080706**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fecal Coliform, (MF)	BRL	0.100									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Denali Water Solutions
Project Name: South Cobb WRC
Workorder: 2304730

ANALYTICAL QC SUMMARY REPORT

BatchID: R513482

Sample ID: **2304730-002ADUP**	Client ID: **Quick Lime**		Units: **wt%**	Prep Date:	Run No: **513482**
SampleType: **DUP**	TestCode: **PERCENT MOISTURE** D2216		BatchID: **R513482**	Analysis Date: **04/12/2023**	Seq No: **12088127**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Percent Moisture	0	0						0	0	30	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

End of Report

REPORT NUMBER
23-118-4228

REPORT DATE
Apr 28, 2023

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Denali Water Cobb County
Jeff Retzke
5175 S Atlanta Rd SE
SMYRNA GA 30080

REPORT OF ANALYSIS

For: (64220) Denali Water Cobb County
Noonday Cementech Copperhill
Lime Stabilized Class A
COB

Analysis	Level Found As Received	Level Found Dry Weight	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: **Noonday Cementech April 2023**	Lab Number: **70276044**		Date Sampled: **2023-04-20 1730**				
Total Kjeldahl nitrogen (TKN)	11200	28700	mg/kg	250	PAI-DK01 *	Cay6-2023/04/24	jdb5-2023/04/24
Phosphorus (total)	4877	12500	mg/kg	5.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Potassium (total)	795.7	2040	mg/kg	10.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Sulfur (total)	2020	5180	mg/kg	10.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Calcium (total)	79690	204300	mg/kg	20.0	EPA 6010	erw9-2023/04/25	trh1-2023/04/28
Magnesium (total)	1318	3379	mg/kg	5.0	EPA 6010	erw9-2023/04/25	trh1-2023/04/28
Sodium (total)	103.8	266.2	mg/kg	5.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Iron (total)	30440	78050	mg/kg	5.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Manganese (total)	323	828	mg/kg	1.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Zinc (total)	233.7	599.2	mg/kg	2.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Nitrate/Nitrite nitrogen	3.0	7.7	mg/kg	0.4	EPA 353.2	akn1-2023/04/24	jdb5-2023/04/24
Barium (total)	58.2	149	mg/kg	0.50	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Cadmium (total)	< 0.50	< 0.50	mg/kg	0.50	EPA 6010	erw9-2023/04/25	trh1-2023/04/28
Chromium (total)	25.5	65.4	mg/kg	1.00	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Lead (total)	13.9	35.6	mg/kg	5.0	EPA 6010	erw9-2023/04/25	trh1-2023/04/28
Mercury (total)	< 0.05	< 0.05	mg/kg	0.05	EPA 7471	mrs3-2023/04/27	trh1-2023/04/28
Molybdenum (total)	2.7	6.9	mg/kg	1.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
pH	12.3		S.U.	0.1	EPA 9045	drp0-2023/04/24	jdb5-2023/04/24
Phosphate P2O5 (calculated)	11200	28700	mg/kg	10	Calculation	Auto-2023/04/25	Auto-2023/04/28

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

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Denali Water Cobb County
Jeff Retzke
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REPORT OF ANALYSIS

For: (64220) Denali Water Cobb County
Noonday Cementech Copperhill
Lime Stabilized Class A
COB

Analysis	Level Found As Received	Level Found Dry Weight	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: Noonday Cementech April 2023	Lab Number: **70276044** (con't)						
Potash K2O (calculated)	958	2460	mg/kg	10	Calculation	Auto-2023/04/25	Auto-2023/04/28
Copper (total)	131	336	mg/kg	1.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Arsenic (total)	1.21	3.10	mg/kg	0.50	EPA 6020	nto7-2023/04/25	trh1-2023/04/26
Selenium (total)	0.97	2.49	mg/kg	0.50	EPA 6020	nto7-2023/04/25	trh1-2023/04/26
Silver (total)	< 1.0	< 1.0	mg/kg	1.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Nickel (total)	8.4	21.5	mg/kg	1.0	EPA 6010	erw9-2023/04/24	trh1-2023/04/28
Ammoniacal Nitrogen	1560	4000	mg/kg	454	SM 4500-NH3 C-(1997)	Cay6-2023/04/25	jdb5-2023/04/25
Organic nitrogen	9640	24700	mg/kg	0.01	Calculation	Auto-2023/04/25	Auto-2023/04/28
Total volatile solids (TVS)	35.8		%	0.01	SM 2540 G-(2015) *	Ppj2-2023/04/25	jdb5-2023/04/25
Fecal coliforms	< 2.0	< 2.0	MPN/g	2.0	EPA 1681	Uml8-2023/04/22	snl7-2023/04/24
Percent solids	39.0		%	0.01	SM 2540 G-(2015) *	Ppj2-2023/04/25	jdb5-2023/04/25
Total neutralizing value (CaCO3 eq)	19.4		%	0.1	AOAC 955.01	jed2-2023/04/24	tat9-2023/04/24

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Denali Water Cobb County
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5175 S Atlanta Rd SE
SMYRNA GA 30080

REPORT OF ANALYSIS

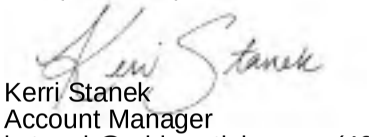
For: (64220) Denali Water Cobb County
Noonday Cementech Copperhill
Lime Stabilized Class A
COB

Analysis	Level Found As Received	Level Found Dry Weight	Units	Reporting Limit	Method	Analyst-Date	Verified-Date

The sample was not able to be tested at the proper pH of 7.0-7.5. The pH reached 12.32 . The result may not be suitable for regulatory purposes.

MPN = most probable number , ppm = parts per million, ppm = mg/kg

For questions please contact:



Kerri Stanek
Account Manager
kstanek@midwestlabs.com (402)590-2982

REPORT NUMBER
23-068-4266 v2

REPORT DATE
Mar 13, 2023

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DENALI WATER SOLUTIONS
JEFF RETZKE
1001 FRASER AVENUE
HUNTSVILLE AL 35801

REPORT OF ANALYSIS

For: (44839) DENALI WATER SOLUTIONS
Cobb County - Northwest Class A
February 2023
COB

Analysis	Level Found As Received	Level Found Dry Weight	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: **Northwest Class A - February 2023**	Lab Number: **70249098**		Date Sampled: **2023-02-23 1730**				
Total Kjeldahl nitrogen (TKN)	7760	30900	mg/kg	250	PAI-DK01 *	krg0-2023/02/28	mgn8-2023/02/28
Phosphorus (total)	2978	11860	mg/kg	5.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Potassium (total)	322.9	1286	mg/kg	10.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Sulfur (total)	914	3640	mg/kg	10.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Calcium (total)	53650	213700	mg/kg	20.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Magnesium (total)	1448	5769	mg/kg	5.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Sodium (total)	56.1	223.5	mg/kg	5.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Iron (total)	11330	45140	mg/kg	5.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Manganese (total)	113	450	mg/kg	1.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Zinc (total)	48.3	192.4	mg/kg	2.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Nitrate/Nitrite nitrogen	0.6	2.4	mg/kg	0.3	EPA 353.2	akn1-2023/02/28	mgn8-2023/02/28
Barium (total)	22.2	88.4	mg/kg	0.50	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Cadmium (total)	< 0.50	< 0.50	mg/kg	0.50	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Chromium (total)	8.88	35.4	mg/kg	1.00	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Lead (total)	< 5.0	< 5.0	mg/kg	5.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Mercury (total)	< 0.05	< 0.05	mg/kg	0.05	EPA 7471	mrs3-2023/03/01	trh1-2023/03/09
Molybdenum (total)	1.0	4.0	mg/kg	1.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
pH	12.2		S.U.	0.1	EPA 9045	drp0-2023/02/27	mgn8-2023/02/28
Phosphate P2O5 (calculated)	6820	27200	mg/kg	10	Calculation	Auto-2023/03/02	Auto-2023/03/09

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HUNTSVILLE AL 35801

REPORT OF ANALYSIS

For: (44839) DENALI WATER SOLUTIONS
Cobb County - Northwest Class A
February 2023
COB

Analysis	Level Found As Received	Level Found Dry Weight	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: Northwest Class A - February 2023	Lab Number: **70249098** (con't)						
Potash K2O (calculated)	389	1550	mg/kg	10	Calculation	Auto-2023/03/02	Auto-2023/03/09
Copper (total)	25.2	100	mg/kg	1.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Arsenic (total)	< 0.50	< 0.50	mg/kg	0.50	EPA 6020	nto7-2023/02/28	trh1-2023/03/09
Selenium (total)	< 0.50	< 0.50	mg/kg	0.50	EPA 6020	nto7-2023/02/28	trh1-2023/03/09
Silver (total)	< 1.0	< 1.0	mg/kg	1.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Nickel (total)	2.7	10.8	mg/kg	1.0	EPA 6010	erw9-2023/02/28	trh1-2023/03/09
Ammoniacal Nitrogen	2080	8290	mg/kg	49.5	SM 4500-NH3 C-(1997)	krg0-2023/03/01	mgn8-2023/03/01
Organic nitrogen	5680	22600	mg/kg	0.01	Calculation	Auto-2023/03/01	Auto-2023/03/09
Percent solids	25.1		%	0.01	SM 2540 G-(2015) *	jsa6-2023/02/28	mgn8-2023/02/28
Fecal coliforms	< 0.2	< 0.2	MPN/g	0.2	EPA 1681	Bab0-2023/02/25	snl7-2023/02/27
Water Extractable P (1:100)	33	131	mg/kg	10	Penn State/Soil Soc. Sci *	kad1-2023/03/09	trh1-2023/03/09
P Source Coefficient	0.004	0.016	n/a	n/a	Penn State/Soil Soc. Sci *	Auto-2023/03/09	Auto-2023/03/09
Total volatile solids (TVS)	35.1		%	0.01	SM 2540 G-(2015) *	jsa6-2023/03/13	mgn8-2023/03/13

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JEFF RETZKE
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HUNTSVILLE AL 35801

REPORT OF ANALYSIS

For: (44839) DENALI WATER SOLUTIONS
Cobb County - Northwest Class A
February 2023
COB

Analysis	Level Found As Received	Level Found Dry Weight	Units	Reporting Limit	Method	Analyst-Date	Verified-Date

The sample was not able to be tested at the proper pH of 7.0-7.5. The pH reached 7.90. The result may not be suitable for regulatory purposes.

pH values that are outside calibration range for the method(4-10)should be considered estimated.
This report was reissued on 2023-03-13 16:18:29 by mgn8 for the following reason:
Total Volatile Solids added on.
MPN = most probable number , ppm = parts per million, ppm = mg/kg

For questions please contact:

Calvin J Sterkel-Colombo
Account Manager
ccolombo@midwestlabs.com ()-

Appendix G

pH TEMPERATURE CORRECTION FORMULA AND CORRECTION FACTORS AT VARYING TEMPERATURES FROM THE STANDARD (25 degrees C)

Formula:
Correction Factor (CF) = 0.03 pH units x (degrees C Temperature Measurement – 25 degrees C)
Actual pH = Measured pH +/- the Correction Factor

Sample Calculation (Sample Temperature = 21 degrees C; pH Meter Reading = 12.304):
CF = 0.03 x (21-25); CF = 0.03 x -4; CF = - 0.12
Actual (Corrected pH) = 12.304 - 0.12 = 12.184

Correction Factors:

Sample Temp C	Correction Factor	Sample Temp C	Correction Factor
40	Plus 0.45	24	Minus 0.03
39	Plus 0.42	23	Minus 0.06
38	Plus 0.39	22	Minus 0.09
37	Plus 0.36	21	Minus 0.12
36	Plus 0.33	20	Minus 0.15
35	Plus 0.30	19	Minus 0.18
34	Plus 0.27	18	Minus 0.21
33	Plus 0.24	17	Minus 0.24
32	Plus 0.21	16	Minus 0.27
31	Plus 0.18	15	Minus 0.30
30	Plus 0.15	14	Minus 0.33
29	Plus 0.12	13	Minus 0.36
28	Plus 0.09	12	Minus 0.39
27	Plus 0.06	11	Minus 0.42
26	Plus 0.03	10	Minus 0.45
25	0.00		

Note: If you are taking sample temperature readings to the tenth of a degree you need to either use the formula to calculate the temperature adjusted pH or adjust the correction factors in the chart above by .003 for each 0.1 degree C change from the sample temperatures listed above.
For example if the sample temp. is 20.5 C the correction factor is 5 x .003 or a change 0.015 from the 20 degrees C listing in the chart. Therefore the correction for 20.5 C is 0.15 - .015 = Minus 0.135

Class A Daily Batch Record

Name of Processing Site:	Copperhill
Lime Stabilization Date: 4/11/23	
Processing End Time: 15:00	

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/11/2023	13:15	12.3	24	12.27	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/11/2023	15:15	12.35	25	12.35	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/12/2023	13:15	12.25	25	12.25	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/11/2023	13:00	175	175	180	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/11/2023	13:35	180	181	179	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/12/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/12/2023	13:00	12.15	25	12.15	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/12/2023	15:00	12.3	26	12.33	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/13/2023	13:00	12.3	25	12.3	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/12/2023	12:30	180	176	180	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/12/2023	13:05	175	171	168	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/13/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/13/2023	13:00	12.16	25	12.29	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/13/2023	15:00	12.22	26	12.25	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/14/2023	13:00	12.17	24	12.14	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/13/2023	12:30	181	180	179	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/13/2023	13:05	175	174	171	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/14/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/14/2023	12:30	12.05	24	12.02	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/14/2023	14:30	12.15	24	12.12	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/15/2023	13:00	12.19	25	12.19	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4//2023	11:45	175	175	175	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4//2023	12:15	168	171	169	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/16/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/16/2023	13:00	12.22	25	12.22	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/16/2023	15:00	12.18	24	12.15	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/17/2023	13:00	12.3	24	12.15	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/16/2023	10:00	180	184	182	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/16/2023	10:50	175	171	168	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/17/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/17/2023	10:00	12.15	24	12.12	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/17/2023	12:00	12.18	25	12.18	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/18/2023	10:00	12.31	24	12.28	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/17/2023	9:00	178	176	174	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/17/2023	9:45	170	168	171	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/18/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/18/2023	10:00	12.15	25	12.15	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/18/2023	12:00	12.16	25	12.16	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/19/2023	10:00	12.18	25	12.18	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/18/2023	14:15	170	172	170	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/18/2023	15:00	168	175	175	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/24/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/24/2023	10:00	12.22	23	12.16	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/24/2023	12:00	12.3	24	12.27	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/25/2023	10:08	12.18	22	12.09	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/24/2023	9:00	175	175	178	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/24/2023	10:00	170	171	170	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/25/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/25/2023	13:00	12.35	22	12.26	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/25/2023	15:00	12.4	24	12.37	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/26/2023	13:00	12.15	22	12.06	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/25/2023	10:30	175	176	175	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/25/2023	11:00	168	170	170	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/26/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/26/2023	10:00	12.22	22	12.13	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/26/2023	12:00	12.35	23	12.29	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/27/2023	10:10	12.3	23	12.24	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/26/2023	9:00	159	167	166	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/26/2023	9:40	170	172	165	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/27/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/27/2023	13:00	12.15	23	12.09	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/27/2023	15:00	12.13	23	12.07	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/28/2023	13:00	12.15	24	12.12	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/27/2023	12:30	165	166	168	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/27/2023	13:05	170	171	169	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/128/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/28/2023	13:00	12.15	24	12.12	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/28/2023	15:00	12.15	25	12.15	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/29/2023	13:00	12.22	25	12.22	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/28/2023	12:30	160	160	161	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/28/2023	13:05	175	172	171	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/29/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/29/2023	9:00	12.15	25	12.15	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/29/2023	11:00	12.22	24	12.19	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	4/30/2023	9:00	12.18	23	12.12	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/29/2023	12:30	177	168	174	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/29/2023	13:05	176	176	172	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill
Lime Stabilization Date: 4/30/23
Processing End Time:15:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	4/30/2023	13:00	12.15	23	12.09	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	4/30/2023	15:00	12.18	24	12.15	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	5/1/2023	13:00	12.3	22	12.21	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	4/30/2023	12:00	175	172	168	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	4/30/2023	12:40	165	165	165	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill TN
Lime Stabilization Date: 5/1/2023
Processing End Time:16:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	5/1/2023	10:00	12.3	22	12.21	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	5/1/2023	12:00	12.28	23	12.22	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	5/2/2023	10:00	12.21	22	12.12	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	5/1/2023	10:00	175	176	170	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	5/1/2023	10:30	171	168	160	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill TN
Lime Stabilization Date: 5/2/2023
Processing End Time:16:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	5/2/023	13:00	12.35	22	12.26	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	5/2/2023	15:00	12.31	23	12.25	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	5/3/2023	13:00	12.28	24	12.25	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	5/2/2023	12:30	180	180	175	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	5/2/2023	13:00	175	170	168	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill TN
Lime Stabilization Date: 5/3/2023
Processing End Time:16:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	5/3/2023	10:00	12.2	24	12.17	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	5/3/2023	12:00	12.16	24	12.13	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	5/4/2023	10:00	12.14	23	12.08	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	5/3/2023	9:00	161	160	162	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	5/3/2023	9:30	159	160	160	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill TN
Lime Stabilization Date: 5/4/2023
Processing End Time:16:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	5/4/2023	10:00	12.2	23	12.14	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	5/4/2023	12:00	12.21	25	12.21	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	5/5/2023	10:00	12.31	23	12.25	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	5/4/2023	9:00	168	171	166	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	5/4/2023	9:30	174	170	170	GH

Class A Daily Batch Record

Name of Processing Site: Copperhill TN
Lime Stabilization Date: 5/5/2023
Processing End Time:16:00

	Date	Time	pH	Sample Temp.	Adjusted pH	Sampler Initials
pH (≥ 12.0) at Initial 70° C (Start of 30 min at 70° C)	5/5/2023	10:00	12.16	23	12.1	GH
pH (≥ 12.0) at 2 hrs After Initial pH Analysis	5/5/2023	12:00	12.19	25	12.19	GH
pH (≥ 11.5) 24 Hours After Initial pH Analysis	5/6/2023	10:00	12.26	24	12.23	GH

	Date	Time	Temp #1	Temp #2	Temp #3	
Initial Temperatures Achieving ≥ 70° C	5/5/2023	9:00	174	172	172	GH
Temperatures ≥ 30 Minutes After Initial ≥ 70° C	5/5/2023	9:30	178	178	175	GH